

UNIVERSITY: The Regents of the University of California, Santa Barbara		SUBRECIPIENT: J. Heyrovsky Institute of Physical Chemistry, Czech Academy of Sciences	
UNIVERSITY'S Principal Investigator (PI): Vojtech Vlcek		SUBRECIPIENT Principal Investigator (PI): Libor Veis	
UNIVERSITY'S Federal Award No: DE-SC0022198		FAIN: DE-SC0022198	Federal Awarding Agency: DOE
Federal Award Issue Date: 8/15/2021	Total Amount of Federal Award to UNIVERSITY: \$1,110,000	CFDA No: 81.049	CFDA Title: Office of Science Financial Assistance Program
Project Title: Real-time dynamics of driven correlated electrons in quantum materials			
Subaward Period of Performance: Start: 08/15/2023 End: 8/14/2024		Amount Funded This Action: \$35,900	Subaward No.: KK2443
Is this Award R & D: Yes			

This Cost-Reimbursement Subaward Agreement (hereinafter referred to as "AGREEMENT") is entered into to specify the terms and conditions under which The Regents of the University of California, on behalf of its Santa Barbara campus (hereinafter referred to as "UNIVERSITY") and J. Heyrovsky Institute of Physical Chemistry, Czech Academy of Sciences (hereinafter referred to as "SUBRECIPIENT") will participate in the conduct of a project supported by U.S. Department of Energy (hereinafter referred to as "SPONSOR") under PRIME AWARD Agreement Number DE-SC0022198.

ARTICLE 1: SCOPE OF AGREEMENT

SUBRECIPIENT shall provide the necessary personnel, equipment, facilities and supplies to perform the work described in the Statement of Work, appended hereto as Exhibit A.

ARTICLE 2: PERIOD OF PERFORMANCE

The period of performance of this AGREEMENT shall be from August 15, 2023 through August 14, 2024.

SUBRECIPIENT may begin work as of the period of performance start date. However, this subaward will not be considered fully executed until the date of last signature on this AGREEMENT. Should the start date precede the last signature date, expenditures are made at the SUBRECIPIENT'S own risk.

ARTICLE 3: CONSIDERATION AND METHOD OF PAYMENT

The total amount presently available for payment and allocated to this AGREEMENT is \$35,900 (USD) for the period stated in ARTICLE 2.

UNIVERSITY shall reimburse SUBRECIPIENT for allowable costs incurred in the performance of this AGREEMENT provided that:

1. The total of such costs does not exceed the amount presently allocated in ARTICLE 3;
2. Such costs are incurred in accordance with the applicable cost principles set forth in the PRIME AWARD and SUBRECIPIENT'S established policies and procedures that are consistent with the PRIME AWARD.

Reimbursement for indirect costs shall not exceed the rate of 10% listed on SUBRECIPIENT'S budget, Exhibit B, in effect during the term of this AGREEMENT.

SUBRECIPIENT shall submit invoices to UNIVERSITY for reimbursement at least quarterly, but not more often than monthly. Costs must be identified on each invoice by cost category similar to the budget in Exhibit B, but at a minimum shall include current and cumulative costs (including cost sharing), subaward number, and certification, as required in 2 CFR 200.415 (a).

Invoices that do not reference UNIVERSITY'S Subaward number shall be returned to SUBRECIPIENT. Invoices shall be submitted on SUBRECIPIENT'S billing forms to the following email address:

Administrative Contact
Luis Narvaez
CHEM
University of California
Santa Barbara, CA 93106
Email: luisnarvaez@chem.ucsb.edu
PH: 805.893.5128

UNIVERSITY will make provisional payment on all invoices submitted in accordance with the terms of this AGREEMENT. The final invoice, clearly marked "FINAL" must be submitted within .0 days after the expiration date of this AGREEMENT. Receipt and payment of the final invoice by UNIVERSITY shall constitute complete satisfaction of all of UNIVERSITY'S obligations under this AGREEMENT and SUBRECIPIENT shall release and discharge UNIVERSITY from all further claims and obligation upon receipt thereof.

ARTICLE 4: ALLOWABLE COSTS AND ADMINISTRATIVE REQUIREMENTS

Allowable costs shall be determined by the SUBRECIPIENT in accordance with the cost principles required by the PRIME AWARD in effect at the effective date of this.

ARTICLE 5: PROJECT PERSONNEL

UNIVERSITY'S Principal Investigator

Vojtech Vlcek
Chemistry
University of California
Santa Barbara, CA 93106
Email: vlcek@chem.ucsb.edu
Ph: 805.893.8906

SUBRECIPIENT'S Principal Investigator

Libor Veis
Department of Theoretical Chemistry
J. Heyrovský Institute of Physical Chemistry
Czech Academy of Sciences
Email: libor.veis@jh-inst.cas.cz
Ph: +420605414860

Changes or modifications to this AGREEMENT shall be approved by a duly authorized official of the UNIVERSITY. UNIVERSITY'S Principal Investigator is authorized to approve only programmatic changes which involve neither a substantial change in the scope of work nor any part of this AGREEMENT.

No change of SUBRECIPIENT'S Principal Investigator shall be made without prior written approval of UNIVERSITY. If for any reason the SUBRECIPIENT'S Principal Investigator cannot continue his/her duties, SUBRECIPIENT will appoint a successor, subject to the approval of the UNIVERSITY. If the parties cannot agree on a successor, either party may terminate this AGREEMENT in accordance with Article 14- Termination.

ARTICLE 6: REPORTS

SUBRECIPIENT shall submit quarterly performance reports to UNIVERSITY's Principal Investigator.

SUBRECIPIENT shall submit a final performance report within 30 days of the end date stated in Article 2. To UNIVERSITY's Principal Investigator.

SUBRECIPIENT shall submit a final property report within 30 days of the end date stated in Article 2. To the UNIVERSITY'S Principal Investigator.

SUBRECIPIENT shall submit a final patent report within 30 days of the end date stated in Article 2. To the UNIVERSITY'S Principal Investigator.

SUBRECIPIENT shall submit a final financial report within 30 days of the end date stated in Article 2. To the UNIVERSITY'S Administrative Contact.

ARTICLE 7: PATENTS

This AGREEMENT shall be subject to the patent rights clause found in Exhibit C.

ARTICLE 8: DISSEMINATION OF PROJECT RESULTS

The SUBRECIPIENT is expected to publish or otherwise make publicly available the results of the work conducted under this AGREEMENT.

At such time as any article resulting from work under this AGREEMENT is published in a scientific, technical or professional journal or publication, one reprint shall be sent to UNIVERSITY'S Principal Investigator.

ARTICLE 9: COPYRIGHT

When publication or similar materials are developed from work supported in whole or in part by this AGREEMENT the author is free to arrange for copyrights without approval. A copy of such materials and royalty-free and other fee-free license to use them for educational and research purposes shall be provided to UNIVERSITY.

Any such copyrighted or copyrightable materials shall be subject to a royalty-free, nonexclusive, world-wide and irrevocable license to the Government to reproduce, publish, or otherwise use them and to authorize others to do so for the Federal Government purposes.

ARTICLE 10: ACKNOWLEDGMENT OF SUPPORT AND DISCLAIMER

An acknowledgment of support and a disclaimer must appear in the publication of any material, whether copyrighted or not, based on or developed under this project, in the following terms:

This material is based upon work supported by the Department of Energy under Award No. DE-SC0022198 and The Regents of the University of California.

All materials, except scientific articles or papers published in scientific journals, must also contain the following:

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors(s) expressed herein do not necessarily state or reflect the views those of the United States Government or any agency thereof or of The Regents of the University of California.

Any solicitation using Federal grant funds to procure goods and services (including construction) costing \$500,000 or more must announce the amount and percentage of total costs to be financed with Federal funds.

ARTICLE 11: PRIOR APPROVAL REQUIREMENTS

Except for those actions listed below, prior approval requirements shall be specified in Exhibit C. All requests for prior approval, including the actions listed below, shall be directed to UNIVERSITY'S Principal Investigator, who shall recommend appropriate actions to the Sponsored Projects Office.

1. Pre-Award Costs
2. No Cost Extensions
3. Change of PI shall be in accordance with Article 5-Project Personnel.

Any requests that require additional approval by the SPONSOR shall be submitted to the UNIVERSITY in sufficient time to allow forwarding to meet the deadlines of the SPONSOR.

ARTICLE 12: TITLE TO EQUIPMENT

Title to all non-expendable personal property purchased with funds from this AGREEMENT shall vest with SUBRECIPIENT upon acquisition. In the event SUBRECIPIENT is unable to complete the project (e.g., SUBRECIPIENT's Principal Investigator transfers to another institution or dispute arises leading to termination of this AGREEMENT), UNIVERSITY reserves the right to take title to all non-expendable personal property acquired with the funds from this AGREEMENT and at UNIVERSITY'S expense, requires SUBRECIPIENT to transfer said property to wherever UNIVERSITY may direct.

ARTICLE 13: RECORDS

The SUBRECIPIENT shall maintain such records and accounts to assure a proper accounting of all project funds. UNIVERSITY, Department of Energy, or any of their duly authorized representatives, shall have access to any books, documents, paper and records of SUBRECIPIENT which are directly pertinent to this AGREEMENT for the purpose of making audits, examinations, excerpts and transcriptions.

ARTILCE 14: TERMINATION

Either party may terminate this AGREEMENT upon thirty (30) days written notice to the other. The notice must be sent via certified mail, return receipt request or overnight courier. In the event of such termination, SUBRECIPIENT shall take all reasonable steps to minimize further costs, and shall be entitled to reimbursement for costs and non cancellable obligations incurred prior to the effective date of terminations, except in no event shall such reimbursement exceed the total amount allocated as set forth in Article 3. The allowability of costs in the event of termination shall be determined in accordance with the PRIME AWARD. Within sixty (60) day after termination, SUBRECIPIENT shall submit a final invoice to UNIVERSITY and UNIVERSITY shall promptly make payment to SUBRECIPIENT for the amount due.

SUBRECIPIENT will furnish all necessary reports of research completed or in progress as required in Article -6 Reports, but no later than the termination date.

ARTICLE 15: DISPUTES

In the event of any dispute, claim, question, or disagreement arising from or relating to this AGREEMENT or the breach thereof, the parties shall use their best efforts to settle the dispute, claim, question, or disagreement. To this effect, they shall consult and negotiate with each other in good faith and, recognizing their mutual interests, attempt to reach a just and equitable solution satisfactory to both parties.

ARTICLE 16: INDEPENDENT CONTRACTOR

SUBRECIPIENT'S relationship to UNIVERSITY in the performance of this AGREEMENT is that of Independent Contractor. Nothing contained in this AGREEMENT shall be construed as constituting SUBRECIPIENT the partner, agent or

employee of UNIVERSITY or as authorizing SUBRECIPIENT to create or assume obligation or liability in the name of UNIVERSITY or to subject UNIVERSITY to any obligation or liability.

The personnel performing the services under this AGREEMENT shall at all times be under SUBRECIPIENT'S exclusive direction and control and shall be employees or agents of SUBRECIPIENT and not employees or agents of the UNIVERSITY.

ARTICLE 17: INDEMNIFICATION

SUBRECIPIENT shall defend, indemnify, and hold UNIVERSITY, its officers, employees, and agents harmless from and against any liability, loss expense (including reasonable attorney's fees), or claims for injury or damages arising out of the performance of this AGREEMENT but only in proportion to and to the extent such liability, loss, expense, attorney's fees, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of SUBRECIPIENT, its officers, agents, or employees.

UNIVERSITY shall defend, indemnify, and hold SUBRECIPIENT, its officers, employees, and agents harmless from and against any liability, loss expense (including reasonable attorney's fees), or claims for injury or damages arising out of the performance of this AGREEMENT but only in proportion to and to the extent such liability, loss, expense, attorney's fees, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of UNIVERSITY, its officers, agents, or employees.

ARTICLE 18: SITE VISITS

UNIVERSITY and DOE, through authorized representatives, have the right, at all reasonable times, to make site visits to review project accomplishments and to provide such technical assistance as may be required. If any site visit is made on the premises of SUBRECIPIENT, SUBRECIPIENT shall provide, and shall require its subrecipients and contractors to provide, all reasonable facilities and assistance for the safety and convenience of UNIVERSITY and DOE representatives in the performance of their duties.

ARTICLE 19: INSURANCE

SUBRECIPIENT shall obtain and maintain a General Liability Insurance policy that includes coverage for bodily injury, property damage, personal and advertising injury, completed operations and contractual liability pertaining to activities performed under this AGREEMENT. SUBRECIPIENT shall also carry and maintain Workers' Compensation Insurance as required by applicable laws of the country in which the work is performed). If requested by the UNIVERSITY, SUBRECIPIENT shall furnish a certificate of insurance evidencing the foregoing coverage.

ARTICLE 20: U.S. FEDERAL COMPLIANCE

SUBRECIPIENT certifies that it follows all applicable federal compliance regulations.

Additionally, SUBRECIPIENT will maintain active registration, as well as complete annual representations and certifications, in the electronic System for Award Management or SAM (<https://www.sam.gov>).

ARTICLE 21: ANTI-TERRORISM COMPLIANCE

SUBRECIPIENT hereby agrees that all funds, including subawards to SUBRECIPIENT, will be used in compliance with all applicable United States anti-terrorist financing and asset control laws, regulations, rules, and executive orders.

ARTICLE 22: TRAFFICKING IN PERSONS CERTIFICATION

SUBRECIPIENT certifies that this clause has been read and understands that:

Under new legislation Federal law prohibits trafficking in persons, procuring commercial sex acts (even in a location where it is otherwise legal such as Nevada), or using forced labor during the period of performance of a federal grant, cooperative agreement or contract. Instances of staff or faculty working on federally funded projects who violate this condition must be reported to the government and penalties will ensue including termination, removal from the project and possible criminal prosecution. Please be advised that the Principal Investigator for this federal project is responsible for informing the staff who work on any federal project that they are subject to this requirement.

For further clarification see below:

- FAR 52.222-50 Combating Trafficking in Persons (applicable to federal contracts)
- 2 CFR Part 175 Award Term for Trafficking in Persons (applicable to federal grants and cooperative agreements)
- Health & Human Services Acquisition Regulation (HHSAR) 352.270-8 Prostitution and Related Activities (applicable to grants and contracts for Health & Human Services(HHS))

ARTICLE 23: TEXT MESSAGING

SUBRECIPIENT certifies that this clause has been read and understands:

Prohibition on Text Messaging and Using Electronic Equipment Supplied By the Government While Driving

Executive Order 13513, Federal Leadership on Reducing Text Messaging While Driving was signed by President Barack Obama on October 1, 2009 (ref.: <http://edocket.access.gpo.gov/2009/pdf/E9-24203.pdf>). This Executive Order introduces a Federal Government-wide prohibition on the use of text messaging while driving on official business or while using Government-supplied equipment. Additional guidance enforcing the ban will be issued at a later date. In the meantime, please adopt and enforce policies that immediately ban text messaging while driving company owned or rented vehicles, government-owned or leased vehicles, or while driving privately owned vehicles when on government business or when performing any work for or on behalf of the federal government.

ARTICLE 24: SEVERABILITY

If any provision of this AGREEMENT becomes or is declared illegal, invalid or unenforceable, the provisions will be divisible from this AGREEMENT and deemed to be deleted from this AGREEMENT. If the deletion substantially alters the basis of this AGREEMENT, the parties will negotiate in good faith to amend the provisions of this AGREEMENT to give effect to the original intent of the parties.

ARTICLE 25: CONFLICT OF INTEREST REQUIREMENTS

SUBRECIPIENT hereby assures UNIVERSITY that: (a) It has a written and enforced policy on conflict of interest available on a publicly accessible website that complies with the Department of Energy's Interim Conflict of Interest Policy for Financial Assistance. (b) To the best of SUBRECIPIENT'S knowledge, all financial disclosures related to the activities funded by this AGREEMENT have been made. (c) Any reportable organizational conflicts of interest will be disclosed to the DOE program office prior to engaging in a procurement or transaction using funds from this AGREEMENT. (d) Prior to SUBRECIPIENT'S expenditures of any funds under this AGREEMENT, SUBRECIPIENT will report to UNIVERSITY:

- Any identified financial conflict of interest found by SUBRECIPIENT and assurance that the financial conflict of interest has been managed, reduced or eliminated in accordance with the DOE regulations, within thirty (30) days of that identification.
- Any financial conflict of interest that SUBRECIPIENT identifies subsequent to SUBRECIPIENT's initial report under this AGREEMENT and assurance that the conflicting interest has been managed, reduced, or eliminated, at least on an interim basis, within thirty (30) days of that identification.

Such reports must include the following information: (a) Grant/contract number; (b) Name of PI; (c) Name of the Investigator (if different from PI) with the financial conflict of interest; and (d) which method was used to protect the involved Department of Energy funded research from bias (e.g., managed, reduced, or eliminated). The report should be submitted by email to the following UNIVERSITY official:

COI Analyst
Office of Research Integrity
University of California, Santa Barbara
coi@research.ucsb.edu

If SUBRECIPIENT does not have a compliant conflict of interest policy, it agrees to develop such a policy prior to the expenditure of funds under this AGREEMENT.

ARTICLE 26: FEDERAL FUNDING ACCOUNTABILITY AND TRANSPARENCY ACT (FFATA)

This award is subject to the Federal Funding Accountability and Transparency Act (FFATA) award term entitled, Reporting Subawards and Executive Compensation, which has been incorporated into PRIME AGENCY Name Terms & Conditions referenced in Exhibit C.

SUBRECIPIENT certifies that the FFATA Clause in Exhibit C has been read and understood.

ARTICLE 27: NOTICES

All notices, and amendments (except Notice of Termination), required by this AGREEMENT shall be made in writing and sent via e-mail. For the purposes of this AGREEMENT the addresses of the parties are as follows:

UNIVERSITY:	Daniela Gallardo Subaward Officer Office of Research 3227 Cheadle Hall University of California Santa Barbara, CA 93106-2050 gallardo@research.ucsb.edu Ph: 805.896.7027 Fax: 805.893.2611	SUBRECIPIENT:	Libor Veis Department of Theoretical Chemistry J. Heyrovský Institute of Physical Chemistry Czech Academy of Sciences Dolejšková 2155/3 18223, Prague Czechia libor.veis@jh-inst.cas.cz +420605414860
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ARTICLE 28: USE OF UNIVERSITY NAME

Neither SUBRECIPIENT nor UNIVERSITY shall use the name of the other, either expressly or by implication, in any publicity or advertisement without the express written approval of the other party to this AGREEMENT.

ARTICLE 29: ADDITIONAL PROVISIONS

The following documents are incorporated herein by reference and are made a party hereof:

- | | |
|--------------|-------------------|
| 1. Exhibit A | Statement of Work |
| 2. Exhibit B | Budget |
| 3. Exhibit C | DOE/DE-SC0022198 |

ARTICLE 30: ORDER OF PRECEDENCE

In the event of conflicting conditions, the following order of precedence shall apply:

The Regents of the University of California, Santa Barbara - J. Heyrovsky Institute of Physical Chemistry, Czech Academy of Sciences

- 1. Agreement
- 2. Exhibit C

ARTICLE 31: GOVERNING LANGUAGE

In the event that a translation of this AGREEMENT is prepared and signed by the parties, this English language version shall be the official version and shall govern if there is a conflict between this English language version and the translation. All disputes [litigation and arbitration] under this AGREEMENT shall be resolved and conducted, regardless of the means or authority, in the English language.

ARTICLE 32: GOVERNING LAW


This AGREEMENT and the legal relationships between the parties shall be governed by and construed in accordance with the laws of the State of California, U.S.A., without regard to its conflict of laws doctrine.

ARTICLE 33: ENTIRE AGREEMENT

This AGREEMENT and attachments hereto contain the entire agreement between the two parties. All modifications must be in writing and signed by the duly authorized official of the UNIVERSITY and SUBRECIPIENT. No oral agreements or conversation with any officer or employee of either party shall affect or modify any of the terms and conditions of this AGREEMENT.

Approved and accepted for:

THE REGENTS OF THE UNIVERSITY
OF CALIFORNIA

DocuSigned by:
 2/7/2024
 29644376DCF04C4...

Signature Date

Daniela Gallardo
Sr. Sponsored Projects Officer/Subaward Officer

J. HEYROVSKY INSTITUTE OF PHYSICAL CHEMISTRY,
CZECH ACADEMY OF SCIENCES

prof.
 Martin Hof
 Digitally signed by prof. Martin Hof
 Date: 2024.01.31 11:07:27 +01'00'

Signature Date

Prof. Martin Hof Dr. rer. nat., DSc.
Director

Development of scalable time dependent density matrix renormalization group

V. Vlcek, The Regents of the University of California, Santa Barbara (Principal Investigator)
L. Veis, J. Heyrovsky Institute of Physical Chemistry (Co-PI)

Non-equilibrium strong field effects are at the forefront of the development of new energy materials, from femtosecond state switching in traditional opto-electronic devices to novel quantum information materials. Control of quantum states and their couplings to the environment presents a new frontier in device design. Future development, enhancement, and the ability for full exploitation of these systems hinges upon an accurate theoretical description of the quantum dynamics.

Our Partnership proposes to develop a multilayer computational framework using successive layers of embedding theories to capture non-equilibrium dynamics. We will overcome the limitations that hinder the computational studies of realistic and practically relevant energy and quantum materials out of equilibrium. Our proposed methodology is based on state-of-the-art ab-initio theory allowing accurate treatment of arbitrary systems. We will tackle the computational hurdle from two sides. In connection with the SciDAC institutes FASTMath and RAPIDS, we will develop novel numerical techniques and combine them with neural network approaches and efficient multiscale embedding methodologies. Our computational framework will fully exploit the capabilities of DOE's flagship computing architectures and address the non-equilibrium properties of systems with thousands of atoms. The new suite of computational tools will enable studying, at a quantum level and using first principles, time-dependent problems that are at least two orders of magnitude larger in spatial and temporal dimensions than those treatable by the most advanced present algorithms. This work will produce efficient and scalable open-source software, tools, and practical procedures available to the research community.

Our development will enable a direct connection between theory, computations, and ultrafast experimental techniques for the characterization of transient quantum properties. In particular, this Partnership will facilitate research on systems for quantum information and sensing, photonics, and ultrafast electronics. The synergy among the researchers will result in new computational and theoretical tools that will further impact a wide range of areas in chemistry, physics, materials science, and applied mathematics.

J. Heyrovsky Institute of Physical Chemistry, Czech Academy of Sciences

10% IDC Budget update for supplemental request

Personnel costs

Name	Pavlo Golub
Full salary	29412 USD
Salary Subsidy for 0,5 FTE	14706 USD
Social and health insurance	5294.2 USD
Institute overhead on Sal/Ben (10 %)	2000.02 USD
Total personnel costs	22000.2 USD

Travel costs for 2 travels each 14 days

Flight tickets	3350.00 USD
Accommodation	5962.51 USD
Transportation	1675.00 USD
Food	2912.51 USD
Total travel costs	13900.02 USD

Total costs	35900.2 USD
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ASSISTANCE AGREEMENT

1. Award No. DE-SC0022198		2. Modification No. 0003	3. Effective Date 08/15/2023	4. CFDA No. 81.049	
5. Awarded To UNIVERSITY OF CALIFORNIA, SANTA BARBARA Attn: Jean Jones 3227 CHEADLE HALL SANTA BARBARA CA 931060001		6. Sponsoring Office Office of Science SC-1 U.S. Department of Energy 1000 Independence Avenue, S.W. Washington DC 20585		7. Period of Performance 08/15/2021 through 08/14/2024	
8. Type of Agreement <input checked="" type="checkbox"/> Grant <input type="checkbox"/> Cooperative Agreement <input type="checkbox"/> Other	9. Authority Public Law 95-91, U.S. Department of Energy Organization Act		10. Purchase Request or Funding Document No. 23SC503195		
11. Remittance Address UNIVERSITY OF CALIFORNIA, SANTA BARBARA Attn: Jean Jones SAASB BUILDING ROOM 1212 Cashier's Office SANTA BARBARA CA 931062003		12. Total Amount Govt. Share: \$4,489,775.00 Cost Share : \$0.00 Total : \$4,489,775.00	13. Funds Obligated This action: \$49,775.00 Total : \$3,379,775.00		
14. Principal Investigator	15. Program Manager Matthias J. Graf Phone: 301-903-0874		16. Administrator U.S. Department of Energy Office of Science Consolidated Service Center Office of Grants & Coop Agreements 9800 South Cass Avenue Lemont, IL 60439		
17. Submit Payment Requests To		18. Paying Office Payment - Direct Payment from U.S. Dept of Treasury		19. Submit Reports To See Federal Assistance Reporting Checklist and Instructions	
20. Accounting and Appropriation Data See Schedule					
21. Research Title and/or Description of Project Real-time dynamics of driven correlated electrons in quantum materials					
For the Recipient			For the United States of America		
22. Signature of Person Authorized to Sign			25. Signature of Grants/Agreements Officer Signature on File		
23. Name and Title		24. Date Signed	26. Name of Officer Warren Riley		27. Date Signed 09/06/2023

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED
DE-SC0022198/0003

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NAME OF OFFEROR OR CONTRACTOR
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>DUNS Number: Not Available UEI: G9QBQDH39DF4 SCHEDULE</p> <p>PURPOSE OF MODIFICATION:</p> <p>This unilateral award obligates supplemental funding for the budget period commencing on the Effective Date specified in Block No. 3 and continuing through the Period of Performance end date specified in Block No. 7. The Budget Pages, attached hereto, are added to the Budget Page for Budget Period No. 3, previously incorporated into this Assistance Agreement via BASE award. As a result of this modification, the total approved budget for the period 8/15/2023 to 8/14/2024 is \$1,159,775.00. The Special Terms and Conditions previously incorporated in this award are replaced with the Special Terms and Conditions attached hereto. The Government Share of the individual Budget Period(s) comprising the current Project Period are amended by this supplemental modification as set forth in FA-TC-0001C, Award Project Period and Budget Periods.</p> <p>ACCOUNTING AND APPROPRIATION DATA (Block 20 Continued): N/A</p> <p>CONTACT INFORMATION:</p> <p>Recipient Business Officer: Sarah Payne 805-893-4584 proposals@research.ucsb.edu See Address in Block 5 of Assistance Agreement</p> <p>Recipient Principal Investigator (Block 14 Continued): Vojtech Vlcek 805-893-8906 vlcek@ucsb.edu See Address in Block 5 of Assistance Agreement</p> <p>DOE Program Manager (Block 15 Continued): Matthias J. Graf Matthias.Graf@science.doe.gov See Address in Block 6 of Assistance Agreement</p> <p>Continued ...</p>				

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED
DE-SC0022198/0003

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NAME OF OFFEROR OR CONTRACTOR
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>DOE Assistance Agreement Administrator: Thy H. Nguyen 630-252-2091 thy.nguyen@science.doe.gov See Address in Block 16 of Assistance Agreement</p> <p>THE INFORMATION BELOW IS FOR DOE INTERNAL USE ONLY: ASAP: YES Extent Competed: COMPETED Davis-Bacon Act: NO PI: Vlcek, Vojtech</p>				



Department of Energy
Intellectual Property Law Division

Office of Science
9800 South Cass Avenue • Lemont, Illinois 60439
(630) 283-7117 Voice
Chicago-IP@science.doe.gov

SUBJECT: Invention Reporting and Patent Responsibility

The Intellectual Property Law Division is responsible for assisting you in fulfilling the patent provisions of your agreement. Please contact our office if you have any questions regarding the intellectual property obligations of your award.

All Subject Inventions (conceived or first actually reduced to practice in the performance of your agreement) must be reported through the iEdison system at <https://www.nist.gov/iedison> within two (2) months after the inventor discloses the invention to you or six (6) months after conception or first actual reduction to practice, depending on the terms of your agreement. Invention reporting is required regardless of any patent protection sought. iEdison accounts may be created by your local iEdison administrator. If your organization does not yet have an iEdison account, please register using the directions at <https://www.nist.gov/iedison/iedison-organization-user-guide/getting-started/registering-your-organization-iedison>.

Please note DOE's recent [U.S. Manufacturing](#) policy requiring substantial U.S. manufacture, which are likely included in your award terms. Failure to comply with the terms of your agreement may result in a loss of rights to Subject Inventions, including, but not limited to, forfeiture of retained rights.

Additionally, through iEdison you are required to promptly report the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned for the invention. If your agreement requires prior DOE approval of publications (e.g. large businesses), our office should be contacted for assistance.

For assistance with iEdison, please contact the iEdison Administrator at iedison@nist.gov. If you have any questions regarding the patent and data provisions of your agreement, please contact our office at (630) 283-7117 or Chicago-IP@science.doe.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael J. Dobbs".

Michael J. Dobbs
Deputy Chief Counsel
Intellectual Property Law Division

RESEARCH & RELATED BUDGET - Budget Period 1

OMB Number: 4040-0001
Expiration Date: 11/30/2025

UEI:

Enter name of Organization:

Budget Type: Project Subaward/Consortium

Budget Period: 1 Start Date: End Date:

A. Senior/Key Person

Prefix	First	Middle	Last	Suffix	Base Salary (\$)	Months			Requested Salary (\$)	Fringe Benefits (\$)	Funds Requested (\$)
						Cal.	Acad.	Sum.			
	Vojtech		Vlcek		0.00				0.00	0.00	0.00

Project Role:

Additional Senior Key Persons: Total Funds requested for all Senior Key Persons in the attached file Total Senior/Key Person

B. Other Personnel

Number of Personnel	Project Role	Months			Requested Salary (\$)	Fringe Benefits (\$)	Funds Requested (\$)
		Cal.	Acad.	Sum.			
<input type="text"/>	Post Doctoral Associates	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	Graduate Students	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	Undergraduate Students	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	Secretarial/Clerical	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	Total Number Other Personnel				Total Other Personnel		<input type="text"/>
Total Salary, Wages and Fringe Benefits (A+B)						<input type="text" value="0.00"/>	

C. Equipment Description

List items and dollar amount for each item exceeding \$5,000

Equipment item	Funds Requested (\$)
<input type="text"/>	<input type="text"/>

Additional Equipment:

Total funds requested for all equipment listed in the attached file

Total Equipment

D. Travel

Funds Requested (\$)

1. Domestic Travel Costs (Incl. Canada, Mexico and U.S. Possessions)	<input type="text"/>
2. Foreign Travel Costs	<input type="text"/>
Total Travel Cost	<input type="text"/>

E. Participant/Trainee Support Costs

Funds Requested (\$)

1. Tuition/Fees/Health Insurance	<input type="text"/>
2. Stipends	<input type="text"/>
3. Travel	<input type="text"/>
4. Subsistence	<input type="text"/>
5. Other <input type="text"/>	<input type="text"/>
<input type="text"/> Number of Participants/Trainees	<input type="text"/>
Total Participant/Trainee Support Costs	<input type="text"/>

F. Other Direct Costs

Funds Requested (\$)

1. Materials and Supplies	
2. Publication Costs	
3. Consultant Services	
4. ADP/Computer Services	
5. Subawards/Consortium/Contractual Costs	35,900.00
6. Equipment or Facility Rental/User Fees	
7. Alterations and Renovations	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	
16.	
17.	
Total Other Direct Costs	35,900.00

G. Direct Costs

Funds Requested (\$)

Total Direct Costs (A thru F) 35,900.00

H. Indirect Costs

Indirect Cost Type	Indirect Cost Rate (%)	Indirect Cost Base (\$)	Funds Requested (\$)
F&A : On Campus	55.50	25,000.00	13,875.00
Total Indirect Costs			13,875.00

Cognizant Federal Agency

(Agency Name, POC Name, and POC Phone Number)

DHHS, Cora Coleman, (415) 437-7820

I. Total Direct and Indirect Costs

Funds Requested (\$)

Total Direct and Indirect Institutional Costs (G + H) 49,775.00

J. Fee

Funds Requested (\$)

K. Total Costs and Fee

Funds Requested (\$)

Total Costs and Fee (I + J) 49,775.00

L. Budget Justification

(Only attach one file.)

Vlcek Budget Justification1016425990.p

Add Attachment

Delete Attachment

View Attachment

RESEARCH & RELATED BUDGET - Cumulative Budget

		Totals (\$)
Section A, Senior/Key Person		0.00
Section B, Other Personnel		
Total Number Other Personnel		
Total Salary, Wages and Fringe Benefits (A+B)		0.00
Section C, Equipment		
Section D, Travel		
1. Domestic		
2. Foreign		
Section E, Participant/Trainee Support Costs		
1. Tuition/Fees/Health Insurance		
2. Stipends		
3. Travel		
4. Subsistence		
5. Other		
6. Number of Participants/Trainees		
Section F, Other Direct Costs		35,900.00
1. Materials and Supplies		
2. Publication Costs		
3. Consultant Services		
4. ADP/Computer Services		
5. Subawards/Consortium/Contractual Costs		35,900.00
6. Equipment or Facility Rental/User Fees		
7. Alterations and Renovations		
8. Other 1		
9. Other 2		
10. Other 3		
11. Other 4		
12. Other 5		
13. Other 6		
14. Other 7		
15. Other 8		
16. Other 9		
17. Other 10		

Section G, Direct Costs (A thru F)	35,900.00
Section H, Indirect Costs	13,875.00
Section I, Total Direct and Indirect Costs (G + H)	49,775.00
Section J, Fee	
Section K, Total Costs and Fee (I + J)	49,775.00

SPECIAL TERMS AND CONDITIONS

FA-TC-0001-CH LEGAL AUTHORITY AND EFFECT (DECEMBER 2014)

- a. A DOE financial assistance award is valid only if it is in writing and is signed, either in writing or electronically, by a DOE Contracting Officer. This individual is reflected as the Grants/Agreements Officer on the Assistance Agreement.
- b. Recipients are free to accept or reject the award. Acceptance of the award is effected by:
 - 1. Performance;
 - 2. Recipient's submission of a request for payment;
 - 3. Recipient's withdrawal of funds obligated; or
 - 4. Recipient's signature on the Assistance Agreement.

FA-TC-0001A RESOLUTION OF CONFLICTING CONDITIONS

Any apparent inconsistency between Federal statutes and regulations and the terms and conditions contained in this award must be referred to the DOE Award Administrator for guidance.

FA-TC-0001B-CH PART 605 AWARD AGREEMENT CONTENTS (APRIL 2017)

This award/agreement consists of the Assistance Agreement cover page, plus the following:

- a. Special terms and conditions.
- b. Attachments:
 - Attachment No. Title
 - 1 Intellectual Property Provisions
 - 2 Federal Assistance Reporting Checklist and Instructions
 - 3 Budget Pages
 - 4 If the award is for research, the Federal-Wide Research Terms and Conditions and DOE Agency Specific Requirements, available at <https://www.nsf.gov/awards/managing/rtc.jsp>
- c. Applicable program regulations, 10 CFR 605 at <http://www.eCFR.gov>.
- d. DOE Assistance Regulations, 2 CFR part 200 as amended by 2 CFR part 910 at <http://www.eCFR.gov>.
- e. Application/proposal as approved by DOE.
- f. National Policy Requirements to Be Incorporated as Award Terms in effect on date of award at <http://www.nsf.gov/awards/managing/rtc.jsp>.

FA-TC-0001C AWARD PROJECT PERIOD AND BUDGET PERIODS

The Project Period for this award is **8/15/2021** through **8/14/2025** consisting of the following Budget Periods:

Budget Period	Start Date	End Date	Government Share	
1	8/15/2021	8/14/2022	\$1,110,000.00	
2	8/15/2022	8/14/2023	\$1,110,000.00	
3	8/15/2023	8/14/2024	\$1,159,775.00	
4	8/15/2024	8/14/2025	\$1,110,000.00	

FA-TC-0002.1 CONFERENCE SPENDING (FEBRUARY 2015)

The recipient shall not expend any funds on a conference not directly and programmatically related to the purpose for which the grant or cooperative agreement was awarded that would defray the cost to the United States Government of a conference held by any Executive branch department, agency, board, commission, or office for which the cost to the United States Government would otherwise exceed \$20,000, thereby circumventing the required notification by the head of any such Executive Branch department, agency, board, commission, or office to the Inspector General (or senior ethics official for any entity without an Inspector General), of the date, location, and number of employees attending such conference.

FA-TC-0003.1 PAYMENT PROCEDURES - ADVANCES THROUGH THE AUTOMATED STANDARD APPLICATION FOR PAYMENTS (ASAP) SYSTEM

- a. Method of Payment. Payment will be made by advances through the Department of Treasury's ASAP system.
- b. Requesting Advances. Requests for advances must be made through the ASAP system. You may submit requests as frequently as required to meet your needs to disburse funds for the Federal share of project costs. If feasible, you should time each request so that you receive payment on the same day that you disburse funds for direct project costs and the proportionate share of any allowable indirect costs. If same-day transfers are not feasible, advance payments must be as close as is administratively feasible to actual disbursements.
- c. Adjusting payment requests for available cash. You must disburse any funds that are available from repayments to and interest earned on a revolving fund, program income, rebates, refunds, contract settlements, audit recoveries, credits, discounts, and interest earned on any of those funds before requesting additional cash payments from DOE.
- d. Payments. All payments are made by electronic funds transfer to the bank account identified on the ASAP Bank Information Form that you filed with the U.S. Department of Treasury.

FA-TC-0006 DIRECT PAYMENT BY DOE/NNSA OF FEDERALLY FUNDED RESEARCH AND DEVELOPMENT CENTER (FFRDC) CONTRACTOR COST

For the purposes of this term, Total Estimated Cost of Project includes DOE/NNSA FFRDC contractor costs. The DOE/NNSA FFRDC contractor cost is not included in the total approved budget for this award, because DOE/NNSA will pay the DOE/NNSA FFRDC contractor portion of the effort under an existing DOE/NNSA contract. Recipient is not responsible for reporting on that portion of the total estimated cost that is paid directly to the DOE/NNSA FFRDC contractor.

FA-TC-0007.1 REBUDGETING AND RECOVERY OF INDIRECT COSTS - REIMBURSABLE INDIRECT COSTS AND FRINGE BENEFITS

- a. If actual allowable indirect costs are less than those budgeted and funded under the award, you may use the difference to pay additional allowable direct costs during the project period. If at the completion of the award the Government's share of total allowable costs (i.e., direct and indirect), is less than the total costs reimbursed, you must refund the difference.
- b. Recipients are expected to manage their indirect costs. DOE will not amend an award solely to provide additional funds for changes in indirect cost rates. DOE recognizes that the inability to obtain full reimbursement for indirect costs means the recipient must absorb the underrecovery. Such underrecovery may be allocated as part of the organization's required cost sharing.

FA-TC-0010 STATEMENT OF FEDERAL STEWARDSHIP

DOE will exercise normal Federal stewardship in overseeing the project activities performed under this award. Stewardship activities include, but are not limited to, conducting site visits; reviewing performance and financial reports; providing technical assistance and/or temporary intervention in unusual circumstances to correct deficiencies which develop during the project; assuring compliance with terms and conditions; and reviewing technical performance after project completion to ensure that the award objectives have been accomplished.

FA-TC-0012 SITE VISITS

DOE authorized representatives have the right to make site visits at reasonable times to review project accomplishments and management control systems and to provide technical assistance, if required. You must provide, and must require your subrecipients to provide, reasonable access to facilities, office space, resources, and assistance for the safety and convenience of the government representatives in the performance of their duties. All site visits and evaluations must be performed in a manner that does not unduly interfere with or delay the work.

FA-TC-0013.1 REPORTING REQUIREMENTS (APRIL 2023)

- a. Requirements. The reporting requirements for this award are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to this award. Failure to comply with these reporting requirements is considered a material noncompliance with the terms of the award. Noncompliance may result in withholding of future payments, suspension, or termination of the current award, and withholding of future awards. A willful failure to perform, a history of failure to perform, or unsatisfactory performance of this and/or other financial assistance awards, may also result in a debarment action to preclude future awards by Federal agencies.
- b. Dissemination of scientific/technical reporting products. Reporting project results in scientific and technical information (STI) publications/products to the DOE Office of Scientific and Technical Information (OSTI) ensures dissemination of research results to the public as well as preservation of the results. The DOE form F 4600.2, B. Scientific/Technical Reporting, has instructions for the DOE Energy Link (E-Link) system managed by OSTI. Scientific/technical reports and other STI products submitted under this award will be disseminated publicly on the Web via OSTI.GOV (<https://www.osti.gov>), unless the STI contains patentable material, protected data, or SBIR/STTR data, which must be indicated per instructions in DOE 4600.2.
- c. Restrictions. STI products submitted to the DOE via E-link must not contain any Protected Personally Identifiable Information (PII), limited rights data, classified information, information subject to export control classification, or other information not subject to public release. The Contracting Officer or Technical Project Officer should be contacted with any questions. Limited rights data means data (other than computer software) developed at private expense that embody trade secrets or are commercial or financial and confidential or privileged. SBIR/STTR Protected Data, and other data subject to statutory data protection authorized by the award may be submitted, provided such data is properly marked and identified during submission. Submissions must not contain any "Proprietary", "Confidential" or "Business Sensitive" markings or similar restrictive markings not authorized by the applicable government agreement.; it is acknowledged that DOE has the right to cancel or ignore such markings.

FA-TC-0014-CH PUBLICATIONS

- a. You are encouraged to publish or otherwise make publicly available the results of the work conducted under the award.
- b. An acknowledgment of Federal support and a disclaimer must appear in the publication of any material, whether copyrighted or not, based on or developed under this project, as follows:

Acknowledgment: "This material is based upon work supported by the U.S. Department of Energy, Office of Science, Office of [*insert the SC Program Office funding the award, e.g., Basic Energy Sciences*], [*Add any additional acknowledgements or information requested by the sponsoring SC Program Office*] under Award Number(s) [*Enter the award number(s)*]."

Disclaimer: "This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof."

FA-TC-0015 FEDERAL, STATE, AND MUNICIPAL REQUIREMENTS

You must obtain any required permits and comply with applicable federal, state, and municipal laws, codes, and regulations for work performed under this award.

FA-TC-0016 INTELLECTUAL PROPERTY PROVISIONS AND CONTACT INFORMATION

- a. The intellectual property provisions applicable to this award are provided as an attachment to this award or are referenced on the Assistance Agreement Face Page. A list of all intellectual property provisions may be found at <http://energy.gov/gc/standard-intellectual-property-ip-provisions-financial-assistance-awards>.
- b. Questions regarding intellectual property matters should be referred to the DOE Award Administrator and the Patent Counsel designated as the service provider for the DOE office that issued the award. The IP Service Providers List is found at <http://energy.gov/gc/downloads/intellectual-property-ip-service-providers-acquisition-and-assistance-transactions>.

FA-TC-0017.1-CH NATIONAL SECURITY: CLASSIFIABLE RESULTS ORIGINATING UNDER AN AWARD (DECEMBER 2014)

- a. This award is intended for unclassified, publicly releasable research. You will not be granted access to classified information. DOE/NNSA does not expect that the results of the research project will involve classified information. Under certain circumstances, however, a classification review of information originated under the award may be required. The Department may review research work generated under this award at any time to determine if it requires classification.
- b. Executive Order 13526 (75 Fed. Reg. 707 (January 5, 2010)) states that basic scientific research information not clearly related to the national security shall not be classified. Nevertheless, some information concerning (among other things) scientific, technological, or economic matters relating to national security or cryptology may require classification. If you originate information during the course of this award that you believe requires classification, you must promptly:
 1. Notify the DOE Project Officer and the DOE Award Administrator;
 2. Submit the information by registered mail directly to the Director, Office of Classification, Office of Document Reviews, EHSS-63/Germantown Building, US Department of Energy, 1000 Independence Ave, S.W., Washington, DC 20585-1290, for classification review.
 3. Restrict access to the information to the maximum extent possible until you are informed that the information is not classified, but no longer than 30 days after receipt by the Director, Office of Classification and Information Control.
- c. If you originate information concerning the production or utilization of special nuclear material (i.e., plutonium, uranium enriched in the isotope 233 or 235, and any other material so determined under section 51 of the Atomic Energy Act) or nuclear energy, you must:
 1. Notify the DOE Project Officer and the DOE Award Administrator;
 2. Submit the information by registered mail directly to the Director, Office of Classification, Office of Document Reviews, US Department of Energy, Post Office Box A, Germantown, MD 20875-0963 for classification review within 180 days of the date the recipient first discovers or first has reason to believe that the information is useful in such production or utilization; and
 3. Restrict access to the information to the maximum extent possible until you are informed that the information is not classified, but no longer than 90 days after receipt by the Director, Office of Classification and Information Control.
- d. If DOE determines any of the information requires classification, you agree that the Government may terminate the award with consent of the recipient in accordance with 2 CFR part 200.340 (a)(3). All material deemed to be classified must be forwarded to the DOE, in a manner specified by DOE.
- e. If DOE does not respond within the specified time periods, you are under no further obligation to restrict access to the information.

FA-TC-0018.2 CONTINUATION APPLICATION AND FUNDING - AWARDS UNDER 10 CFR 605 (FEBRUARY 2015)

- a. Continuation Application. A continuation application is a non-competitive application for an additional budget period within a previously approved project period. At least 90 days before the end of each budget period, you must submit your continuation application through the Office of Science's Portfolio Analysis Management System (PAMS) at <https://pamspublic.science.energy.gov/webpamsepsexternal/login.aspx>.

Your continuation application must include the following information:

1. A report on your progress towards meeting the objectives of the project, including any significant findings, conclusions, or developments, and an estimate of any unobligated balances remaining at the end of the budget period. If the remaining unobligated balance is estimated to exceed 10 percent of the funds available for the budget period, explain why the excess funds have not been obligated and how they will be used in the next budget period.
 2. A completed budget page and supporting justification for the upcoming budget period when a change (increase or decrease) to anticipated future costs will exceed 25 percent of the original recommended future budget or when a budget for the upcoming budget period was not approved at the time of award.
 3. A description of your plans for the conduct of the project during the upcoming budget period, if there are changes from the DOE approved application.
- b. Continuation Funding. Continuation funding is contingent on (1) availability of funds appropriated by Congress for the purpose of this program; (2) the availability of future-year budget authority; (3) substantial progress towards meeting the objectives of your approved application; (4) submittal of required reports; and (5) compliance with the terms and conditions of the award.

FA-TC-0020A NOTICE REGARDING THE PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS -- SENSE OF CONGRESS

It is the sense of the Congress that, to the greatest extent practicable, all equipment and products purchased with funds made available under this award should be American-made.

FA-TC-0023 ENVIRONMENTAL, SAFETY AND HEALTH (ES&H) PERFORMANCE OF WORK AT DOE FACILITIES

With respect to the performance of any portion of the work under this award which is performed at a DOE-owned or controlled site, the recipient agrees to comply with all State and Federal ES&H regulations and with all other ES&H requirements of the operator of such site.

Prior to the performance any work at a DOE-Owned or controlled site, the recipient shall contact the site facility manager for information on DOE and site specific ES&H requirements.

The recipient shall apply this term to its sub-recipients and contractors.

FA-TC-0025A INSURANCE COVERAGE (DECEMBER 2014)

See 2 CFR 200.310 for insurance requirements for real property and equipment acquired or improved with Federal funds.

FA-TC-0025C.2-CH EXEMPT PROPERTY (MAY 2023)

Exempt property means property acquired under a federal award where DOE has chosen to vest title to the property to the non-federal entity without further obligations to the Federal Government, based upon the explicit terms and conditions of the Federal award.

Except items of equipment identified as Federally-owned in FA-TC-0025C.1-CH, Federally-Owned Property, incorporated in this award, if applicable, equipment acquired by the Recipient with funds provided by this financial assistance award are exempt property in accordance with 2 CFR 200.312(c) and Section 6306 of the Federal Grant and Cooperative Agreement Act of 1977, 31 U.S.C. Section 6301 et seq.

Exempt property must be used by the non-Federal entity in the program or project for which it was acquired as long as it is needed, whether or not the project or program continues to be supported by the Federal award. When no longer needed for the originally authorized purpose, the equipment may be used by programs supported by the Federal awarding agency in the priority order specified in 2 CFR Part 200.313(c)(1)(i) and (ii).

FA-TC-0025D EQUIPMENT (DECEMBER 2014)

Subject to the conditions provided in 2 CFR Part 200.313, title to equipment (property) acquired under a Federal award will vest conditionally with the non-Federal entity.

The non-Federal entity cannot encumber this property and must follow the requirements of 2 CFR Part 200.313 before disposing of the property.

States must use equipment acquired under a Federal award by the state in accordance with state laws and procedures.

Equipment must be used by the non-Federal entity in the program or project for which it was acquired as long as it is needed, whether or not the project or program continues to be supported by the Federal award. When no longer needed for the originally authorized purpose, the equipment may be used by programs supported by the Federal awarding agency in the priority order specified in 2 CFR Part 200.313(c)(1)(i) and (ii).

Management requirements, including inventory and control systems, for equipment are provided in 2 CFR Part 200.313(d).

When equipment acquired under a Federal award is no longer needed, the non-Federal entity must obtain disposition instructions from the Federal awarding agency or pass-through entity.

Disposition will be made as follows: (a) items of equipment with a current fair market value of \$5,000 or less may be retained, sold, or otherwise disposed of with no further obligation to the Federal awarding agency; (b) Non-Federal entity may retain title or sell the equipment after compensating the Federal awarding agency as described in 2 CFR Part 200.313(e)(2); or (c) transfer title to the Federal awarding agency or to an eligible third party as specified in 2 CFR Part 200.313(e)(3).

See 2 CFR Part 200.313 for additional requirements pertaining to equipment acquired under a Federal award.

Also see 2 CFR Part 910.360 for additional requirements for Equipment for For-Profit recipients.

See also 2 CFR Part 200.439 Equipment and other capital expenditures.

FA-TC-0025E SUPPLIES (DECEMBER 2014)

See 2 CFR Part 200.314 for requirements pertaining to supplies acquired under a Federal award.

See also § 200.453 Materials and supplies costs, including costs of computing devices.

FA-TC-0025G PROPERTY TRUST RELATIONSHIP (DECEMBER 2014)

Real property, equipment, and intangible property, that are acquired or improved with a Federal award must be held in trust by the non-Federal entity as trustee for the beneficiaries of the project or program under which the property was acquired or improved.

See 2 CFR Part 200.316 for additional requirements pertaining to real property, equipment, and intangible property acquired or improved under a Federal award.

FA-TC-0041 REPORTING SUBAWARDS AND EXECUTIVE COMPENSATION

a. Reporting of first-tier subawards.

1. Applicability. Unless you are exempt as provided in paragraph d. of this award term, you must report each action that equals or exceeds \$30,000 in Federal funds for a subaward to a non-Federal entity or Federal agency (see definitions in paragraph e. of this award term).

2. Where and when to report.
 - i. The non-Federal entity or Federal agency must report each obligating action described in paragraph a.1. of this award term to <http://www.fsrs.gov>.
 - ii. For subaward information, report no later than the end of the month following the month in which the obligation was made. (For example, if the obligation was made on November 7, 2010, the obligation must be reported by no later than December 31, 2010.)
 3. What to report. You must report the information about each obligating action that the User Guide/Awardee Guide submission instructions posted at <http://www.fsrs.gov> specifies.
- b. Reporting total compensation of recipient executives for non-Federal entities.
1. Applicability and what to report. You must report total compensation for each of your five most highly compensated executives for the preceding completed fiscal year, if -
 - i. The total Federal funding authorized to date under this Federal award equals or exceeds \$30,000 as defined in [2 CFR 170.320](#);
 - ii. in the preceding fiscal year, you received -
 - (A) 80 percent or more of your annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at [2 CFR 170.320](#) (and subawards), and
 - (B) \$25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at [2 CFR 170.320](#) (and subawards); and,
 - iii. The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 ([15 U.S.C. 78m\(a\), 78o\(d\)](#)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/excomp.htm>.)
 2. Where and when to report. You must report executive total compensation described in paragraph b.1. of this award term:
 - i. As part of your registration profile at <https://www.sam.gov>.
 - ii. By the end of the month following the month in which this award is made, and annually thereafter.
- c. Reporting of Total Compensation of Subrecipient Executives.
1. Applicability and what to report. Unless you are exempt as provided in paragraph d. of this award term, for each first-tier non-Federal entity subrecipient under this award, you shall report the names and total compensation of each of the subrecipient's five most highly compensated executives for the subrecipient's preceding completed fiscal year, if -
 - i. in the subrecipient's preceding fiscal year, the subrecipient received -
 - (A) (A) 80 percent or more of its annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at [2 CFR 170.320](#) (and subawards) and,

- (B) (B) \$25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts), and Federal financial assistance subject to the Transparency Act (and subawards); and
- ii. The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 ([15 U.S.C. 78m\(a\), 78o\(d\)](#)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>.)
2. Where and when to report. You must report subrecipient executive total compensation described in paragraph c.1. of this award term:
- i. To the recipient.
- ii. By the end of the month following the month during which you make the subaward. For example, if a subaward is obligated on any date during the month of October of a given year (*i.e.*, between October 1 and 31), you must report any required compensation information of the subrecipient by November 30 of that year.
- d. Exemptions.
- If, in the previous tax year, you had gross income, from all sources, under \$300,000, you are exempt from the requirements to report:
- i. Subawards, and
- ii. The total compensation of the five most highly compensated executives of any subrecipient.
- e. Definitions. For purposes of this award term:
1. Federal Agency means a Federal agency as defined at [5 U.S.C. 551\(1\)](#) and further clarified by [5 U.S.C. 552\(f\)](#).
2. Non-Federal *entity* means all of the following, as defined in [2 CFR part 25](#):
- i. A Governmental organization, which is a State, local government, or Indian tribe;
- ii. A foreign public entity;
- iii. A domestic or foreign nonprofit organization; and,
- iv. A domestic or foreign for-profit organization
3. Executive means officers, managing partners, or any other employees in management positions.
4. Subaward:
- i. This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which you received this award and that you as the recipient award to an eligible subrecipient.
- ii. The term does not include your procurement of property and services needed to carry out the project or program (for further explanation, see [2 CFR 200.331](#)).
- iii. A subaward may be provided through any legal agreement, including an agreement that you or a subrecipient considers a contract.
5. Subrecipient means a non-Federal entity or Federal agency that:
- i. Receives a subaward from you (the recipient) under this award; and
- ii. Is accountable to you for the use of the Federal funds provided by the subaward.

6. Total compensation means the cash and noncash dollar value earned by the executive during the recipient's or subrecipient's preceding fiscal year and includes the following (for more information see [17 CFR 229.402\(c\)\(2\)](#)).

FA-TC-0042.1 SYSTEM FOR AWARD MANAGEMENT AND UNIVERSAL IDENTIFIER REQUIREMENTS

a. Requirement for System for Award Management (SAM)

Unless exempted from this requirement under 2 CFR 25.110, the prime recipient must remain registered and maintain current information in SAM for the entire period of performance of the award. This includes providing information on the prime recipient's immediate and highest-level owner and subsidiaries, as well as on all of its predecessors that have been awarded a Federal contract or Federal financial assistance agreements within the last three years, if applicable, until the prime recipient submits the final financial report required under this award or receives the final payment, whichever is later. This requires the prime recipient to review its information in SAM at least annually after the initial registration, and to update its information as soon as there are changes. Reviews and updates may be required more frequently due to changes in recipient information or as required by another award term.

b. Requirement for Unique Entity Identifier

If authorized to make subawards under this award, the prime recipient:

1. Must notify potential subrecipients that no entity (see definition in paragraph C of this award term) may receive a subaward until the entity has provided its unique entity identifier to the prime recipient.
2. Must not make a subaward to an entity unless the entity has provided its unique entity identifier to the prime recipient. Subrecipients are not required to obtain an active SAM registration, but must obtain a unique entity identifier.

c. Definitions

For purposes of this term:

1. System for Award Management (SAM) means the Federal repository into which a recipient must provide information required for the conduct of business as a recipient. Additional information about registration procedures may be found at the SAM internet site (currently at <https://www.sam.gov>).
2. Unique Entity Identifier means the identifier assigned by SAM to uniquely identify business entities.
3. Entity includes non-Federal entities as defined at 2 CFR 200.1 and also includes all of the following for purposes of this part:
 - i. A foreign organization;
 - ii. A foreign public entity;
 - iii. A domestic for-profit organization; and
 - iv. A Federal agency.
4. Subaward has the meaning given in 2 CFR 200.1.
5. Subrecipient has the meaning given in 2 CFR 200.1.

FA-TC-0043-CH PORTFOLIO ANALYSIS AND MANAGEMENT SYSTEM (FEBRUARY 2023)

a. A recipient is required to submit the following actions through DOE's Portfolio Analysis and Management Systems (PAMS):

1. A request for a no-cost extension (NCE) or notification of a NCE pursuant to 2 CFR 200.308(e)(2). A request or notification should be submitted as soon as the need for an extension is known but **no later than 10 calendar days** before the end of the period of performance and must contain the following information:
 - i. The reason(s) why the project could not be completed within the existing award schedule.

- ii. An explanation of the work that will be done during the extension including confirmation that all such work is part of the original scope of work selected for funding; and
 - iii. Confirmation that DOE funds remain available for the proposed work to continue during the extension.
2. Principal Investigator (PI) change and/or PI departure. Prior approval is required for a change in the PI in accordance with 2 CFR Part 200.308(c)(2). The request must include the following:
- i. The proposed PI's name and contact information.
 - ii. An explanation for the departure/change.
 - iii. A copy of the proposed PI's biographical sketch.
- b. An action as described above must be submitted by an authorized representative of the recipient organization.
- c. PAMS is available at <https://pamspublic.science.energy.gov>. If you have trouble using PAMS, consult the "PAMS Help" link on the PAMS website or contact the PAMS Helpdesk at (855) 818-1846 (toll-free) or (301) 903-9610 or sc.pams-helpdesk@science.doe.gov.

FA-TC-0065 LOBBYING RESTRICTIONS (MARCH 2012)

By accepting funds under this award, you agree that none of the funds obligated on the award shall be expended, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

FA-TC-0066.1-CH CORPORATE FELONY CONVICTION AND FEDERAL TAX LIABILITY ASSURANCES (MARCH 2014)

By entering into this agreement, the undersigned attests that the awardee listed in Block 5 of the Assistance Agreement has not been convicted of a felony criminal violation under Federal law in the 24 months preceding the date of signature.

The undersigned further attests that the awardee listed in Block 5 of the Assistance Agreement does not have any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

For purposes of these assurances, the following definitions apply:

A Corporation includes any entity that has filed articles of incorporation in any of the 50 states, the District of Columbia, or the various territories of the United States [but not foreign corporations]. It includes both for-profit and non-profit organizations.

FA-TC-0068.1 NONDISCLOSURE AND CONFIDENTIALITY AGREEMENTS ASSURANCES (JUNE 2015)

- a. By entering into this agreement, the undersigned attests that the awardee listed in Block 5 of the Assistance Agreement **does not and will not** require its employees or contractors to sign internal nondisclosure or confidentiality agreements or statements prohibiting or otherwise restricting its employees or contractors from lawfully reporting waste, fraud, or abuse to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information.
- b. The undersigned further attests that the awardee listed in Block 5 of the Assistance Agreement **does not and will not** use any Federal funds to implement or enforce any nondisclosure and/or confidentiality policy, form, or agreement it uses unless it contains the following provisions:
 1. *“These provisions are consistent with and do not supersede, conflict with, or otherwise alter the employee*

obligations, rights, or liabilities created by existing statute or Executive order relating to (1) classified information, (2) communications to Congress, (3) the reporting to an Inspector General of a violation of any law, rule, or regulation, or mismanagement, a gross waste of funds, an abuse of authority, or a substantial and specific danger to public health or safety, or (4) any other whistleblower protection. The definitions, requirements, obligations, rights, sanctions, and liabilities created by controlling Executive orders and statutory provisions are incorporated into this agreement and are controlling.”

2. The limitation above shall not contravene requirements applicable to Standard Form 312, Form 4414, or any other form issued by a Federal department or agency governing the nondisclosure of classified information.
3. Notwithstanding provision listed in paragraph (a), a nondisclosure or confidentiality policy form or agreement that is to be executed by a person connected with the conduct of an intelligence or intelligence-related activity, other than an employee or officer of the United States Government, may contain provisions appropriate to the particular activity for which such document is to be used. Such form or agreement shall, at a minimum, require that the person will not disclose any classified information received in the course of such activity unless specifically authorized to do so by the United States Government. Such nondisclosure or confidentiality forms shall also make it clear that they do not bar disclosures to Congress, or to an authorized official of an executive agency or the Department of Justice, that are essential to reporting a substantial violation of law.

FA-TC-0070 REPORTING OF MATTERS RELATED TO RECIPIENT INTEGRITY AND PERFORMANCE (DECEMBER 2015)

a. General Reporting Requirement

If the total value of your currently active grants, cooperative agreements, and procurement contracts from all Federal awarding agencies exceeds \$10,000,000 for any period of time during the period of performance of this Federal award, then you as the recipient during that period of time must maintain the currency of information reported to the System for Award Management (SAM) that is made available in the designated integrity and performance system (currently the Federal Awardee Performance and Integrity Information System (FAPIS)) about civil, criminal, or administrative proceedings described in paragraph 2 of this award term and condition. This is a statutory requirement under section 872 of Public Law 110-417, as amended (41 U.S.C. 2313). As required by section 3010 of Public Law 111-212, all information posted in the designated integrity and performance system on or after April 15, 2011, except past performance reviews required for Federal procurement contracts, will be publicly available.

b. Proceedings About Which You Must Report

Submit the information required about each proceeding that:

1. Is in connection with the award or performance of a grant, cooperative agreement, or procurement contract from the Federal Government;
2. Reached its final disposition during the most recent five year period; and
3. Is one of the following:
 - (A) criminal proceeding that resulted in a conviction, as defined in paragraph 5 of this award term and condition;
 - (B) A civil proceeding that resulted in a finding of fault and liability and payment of a monetary fine, penalty, reimbursement, restitution, or damages of \$5,000 or more;
 - (C) An administrative proceeding, as defined in paragraph 5. of this award term and condition, that resulted in a finding of fault and liability and your payment of either a monetary fine or penalty of \$5,000 or more or reimbursement, restitution, or damages in excess of \$100,000; or

(D) Any other criminal, civil, or administrative proceeding if:

- (i) It could have led to an outcome described in paragraph b.3.(A), (B), or (C) of this award term and condition;
- (ii) It had a different disposition arrived at by consent or compromise with an acknowledgment of fault on your part; and
- (iii) The requirement in this award term and condition to disclose information about the proceeding does not conflict with applicable laws and regulations.

c. Reporting Procedures

Enter in the SAM Entity Management area the information that SAM requires about each proceeding described in paragraph 2 of this award term and condition. You do not need to submit the information a second time under assistance awards that you received if you already provided the information through SAM because you were required to do so under Federal procurement contracts that you were awarded.

d. Reporting Frequency

During any period of time when you are subject to the requirement in paragraph 1 of this award term and condition, you must report proceedings information through SAM for the most recent five-year period, either to report new information about any proceeding(s) that you have not reported previously or affirm that there is no new information to report. Recipients that have Federal contract, grant, and cooperative agreement awards with a cumulative total value greater than \$10,000,000 must disclose semiannually any information about the criminal, civil, and administrative proceedings.

e. Definitions

For purposes of this award term and condition:

1. Administrative proceeding means a non-judicial process that is adjudicatory in nature in order to make a determination of fault or liability (*e.g.*, Securities and Exchange Commission Administrative proceedings, Civilian Board of Contract Appeals proceedings, and Armed Services Board of Contract Appeals proceedings). This includes proceedings at the Federal and State level but only in connection with performance of a Federal contract or grant. It does not include audits, site visits, corrective plans, or A. Reporting of Matters Related to Recipient Integrity and Performance.
2. Conviction, for purposes of this award term and condition, means a judgment or conviction of a criminal offense by any court of competent jurisdiction, whether entered upon a verdict or a plea, and includes a conviction entered upon a plea of *nolo contendere*.
3. Total value of currently active grants, cooperative agreements, and procurement contracts includes—
 - (A) Only the Federal share of the funding under any Federal award with a recipient cost share or match; and
 - (B) The value of all expected funding increments under a Federal award and options, even if not yet exercised.

FA-TC-0072-CH PROMOTING FREE SPEECH AND RELIGIOUS LIBERTY

States, local governments, or other public entities may not condition sub-awards in a manner that would discriminate, or disadvantage sub-recipients based on their religious character or discourage their freedom of speech.

FA-TC-0073-CH INTERIM CONFLICT OF INTEREST POLICY FOR FINANCIAL ASSISTANCE

The DOE interim Conflict of Interest Policy for Financial Assistance (COI Policy) can be found at <https://www.energy.gov/management/department-energy-interim-conflict-interest-policy-requirements-financial-assistance>. This policy is applicable to all non-Federal entities applying for, or that receive, DOE funding by means of a financial assistance award (*e.g.*, a grant, cooperative agreement, or technology investment agreement) and, through the implementation of this policy by the entity, to each Investigator who is planning to participate in, or is participating in, the project funded wholly or in part under this Award. The term “non-Federal entity” means a State, local government, Indian tribe, Institution of Higher Education, nonprofit organization, or for-profit organization

that carries out a DOE award as a recipient or subrecipient. The term “Investigator” means the PI and any other person, regardless of title or position, who is responsible for the purpose, design, conduct, or reporting of a project funded by DOE or proposed for funding by DOE. The Recipient must flow down the requirements of the interim COI Policy to any subrecipient non-Federal entities, with the exception of DOE National Laboratories. Further, the Recipient must include all financial conflicts of interests (FCOI), i.e., unmanaged and unmanageable, in its initial and ongoing FCOI reports.

Prior to award, the Recipient was required to: 1) ensure all Investigators on this Award completed their significant financial disclosures; 2) review the disclosures; 3) determine whether a FCOI exists; 4) develop and implement a management plan for FCOIs; and 5) provide DOE with an initial FCOI report that includes all FCOIs (i.e. unmanaged and unmanageable). Within 180 days of the date of the Award, the Recipient must be in full compliance with the other requirements set forth in DOE’s interim COI Policy.

Failure to comply with this term may result in DOE taking any action identified in section VII of the Interim COI Policy or any other action available under the terms of the financial assistance award or in applicable regulations.

FA-TC-0073.1-CH ORGANIZATIONAL CONFLICT OF INTEREST

If the Recipient has a parent, affiliate, or subsidiary organization that is not a state, local government, or Indian tribe, the Recipient must also maintain written standards of conduct covering organizational conflicts of interest. Organizational conflicts of interest are those where, because of relationships with a parent company, affiliate, or subsidiary organization, the Recipient is unable or appears to be unable to be impartial in conducting procurement action involving a related organization as discussed in 2 CFR 200.318(c)(2).

The Recipient must disclose in writing any potential or actual organizational conflict of interest to the DOE Contracting Officer. The Recipient must provide the disclosure prior to engaging in a procurement or transaction using project funds with a parent, affiliate, or subsidiary organization that is not a state, local government, or Indian tribe. For a list of the information that must be included in the disclosure, see Section VI. of the DOE Interim Conflict of Interest Policy for Financial Assistance at <https://www.energy.gov/management/department-energy-interim-conflict-interest-policy-requirements-financial-assistance> (Interim COI Policy).

If the effects of the potential or actual organizational conflict of interest cannot be avoided, neutralized, or mitigated, the Recipient must procure goods and services from other sources when using project funds. Otherwise, DOE may terminate the Award unless continued performance is determined to be in the best interest of the Federal government.

The Recipient is responsible for ensuring non-Federal subrecipient entities’ compliance with this term.

Failure to comply with this term may result in DOE taking any action identified in section VII of the Interim COI Policy or any other action available under the terms of the financial assistance award or in applicable regulations.

FA-TC-0076-CH CURRENT AND PENDING SUPPORT

Definitions:

Current and pending support: (a) All resources made available, or expected to be made available, to an individual in support of the individual’s RD&D efforts, regardless of (i) whether the source is foreign or domestic; (ii) whether the resource is made available through the entity applying for an award or directly to the individual; or (iii) whether the resource has monetary value; and (b) includes in-kind contributions requiring a commitment of time and directly supporting the individual’s RD&D efforts, such as the provision of office or laboratory space, equipment, supplies, employees, or students. This term has the same meaning as the term Other Support as applied to researchers in NSPM-33: For researchers, Other Support includes all resources made available to a researcher in support of and/or related to all of their professional RD&D efforts, including resources provided directly to the individual or through the organization, and regardless of whether or not they have monetary value (e.g., even if the support received is only in-kind, such as office/laboratory space, equipment, supplies, or employees). This includes resource and/or financial support from all foreign and domestic entities, including but not limited to, gifts provided with terms or

conditions, financial support for laboratory personnel, and participation of student and visiting researchers supported by other sources of funding.

Foreign Government-Sponsored Talent Recruitment Program: An effort directly or indirectly organized, managed, or funded by a foreign government, or a foreign government instrumentality or entity, to recruit science and technology professionals or students (regardless of citizenship or national origin, or whether having a full-time or part-time position). Some foreign government-sponsored talent recruitment programs operate with the intent to import or otherwise acquire from abroad, sometimes through illicit means, proprietary technology or software, unpublished data and methods, and intellectual property to further the military modernization goals and/or economic goals of a foreign government. Many, but not all, programs aim to incentivize the targeted individual to relocate physically to the foreign state for the above purpose. Some programs allow for or encourage continued employment at U.S. research facilities or receipt of federal research funds while concurrently working at and/or receiving compensation from a foreign institution, and some direct participants not to disclose their participation to U.S. entities. Compensation could take many forms including cash, research funding, complimentary foreign travel, honorific titles, career advancement opportunities, promised future compensation, or other types of remuneration or consideration, including in-kind compensation.

Senior/key personnel – an individual who contributes in a substantive, meaningful way to the scientific development or execution of a RD&D project proposed to be carried out with a DOE award. DOE has designated any individual who meets the definition of senior/key personnel as a covered individual responsible for completing a current and pending support disclosure. DOE may further designate covered individuals during award negotiations or the award period of performance.

Prior to award, the Recipient was required to provide current and pending support disclosure statements and a CV or Biosketch for each principal investigator (PI) and senior/key personnel, at the recipient and subrecipient level, regardless of funding source. In accordance with the Federal Assistance Reporting Checklist, throughout the life of the award, the Recipient must submit current and pending support disclosure statements and a CV or Biosketch for any new PI and senior/key personnel at the recipient and subrecipient level, added to the project funded under this Award within thirty (30) days of the individual joining the project. In addition, if there are any changes to current and pending support disclosure statements previously submitted to DOE, the Recipient must submit updated current and pending disclosure statements within thirty (30) days of the change. The Recipient must ensure all PIs and senior/key personnel at the recipient and subrecipient level, are aware of the requirement to submit updated current and pending support disclosure statements to DOE.

Current and pending support is intended to allow the identification of potential duplication, overcommitment, potential conflicts of interest or commitment, and all other sources of support. All PIs and senior/key personnel at the recipient and subrecipient level must provide a list of all sponsored activities, awards, and appointments, whether paid or unpaid; provided as a gift with terms or conditions or provided as a gift without terms or conditions; full-time, part-time, or voluntary; faculty, visiting, adjunct, or honorary; cash or in-kind; foreign or domestic; governmental or private-sector; directly supporting the individual's research or indirectly supporting the individual by supporting students, research staff, space, equipment, or other research expenses. All foreign government-sponsored talent recruitment programs must be identified in current and pending support.

For every activity, list the following items:

- The sponsor of the activity or the source of funding.
- The award or other identifying number.
- The title of the award or activity. If the title of the award or activity is not descriptive, add a brief description of the research being performed that would identify any overlaps or synergies with the proposed research.
- The total cost or value of the award or activity, including direct and indirect costs and cost share. For pending proposals, provide the total amount of requested funding.
- The award period (start date – end date).
- The person-months of effort per year being dedicated to the award or activity.
- Identify any overlap, duplication of effort, or synergistic efforts, with a description of the other

- award or activity to the current and pending support.
Details of any obligations, contractual or otherwise, to any program, entity, or organization sponsored by a foreign government must be provided to DOE.

All PIs and senior/key personnel must provide a separate disclosure statement listing the required information above regarding current and pending support. If the current version of the NSF form (January 19, 2023 or later) is not used, the individual must sign and date their respective disclosure statement and include the following certification statement:

I, [Full Name and Title], certify to the best of my knowledge and belief that the information contained in this Current and Pending Support Disclosure Statement is true, complete and accurate. I understand that any false, fictitious, or fraudulent information, misrepresentations, half-truths, or omissions of any material fact, may subject me to criminal, civil or administrative penalties for fraud, false statements, false claims or otherwise. (18 U.S.C. §§ 1001 and 287, and 31 U.S.C. §§ 3729-3730 and 3801-3812). I further understand and agree that (1) the statements and representations made herein are material to DOE's funding decision, and (2) I have a responsibility to update the disclosures during the period of performance of the award should circumstances change which impact the responses provided above.

Supporting documents of any identified source of support must be provided to DOE upon request, including certified translations of any document.

The information may be provided in the format approved by the National Science Foundation (NSF), which may be generated by the Science Experts Network Curriculum Vita (SciENCv), a cooperative venture maintained at <https://www.ncbi.nlm.nih.gov/sciencv/>, and is also available at <https://www.nsf.gov/bfa/dias/policy/nsfapprovedformats/cps.pdf>. The use of a format required by another agency is intended to reduce the administrative burden to researchers by promoting the use of common formats. If the NSF format is used, the individual must still include a signature, date, and a certification statement using the language included in the paragraph above or ensure a similar certification is included on the NSF form, i.e., January 19, 2023 version or later).

**U.S. Department of Energy
FEDERAL ASSISTANCE REPORTING CHECKLIST
AND INSTRUCTIONS**

1. Identification Number: See Block 1 of the Assistance Agreement	2. Program/Project Title: See Block 21 of the Assistance Agreement																																											
3. Recipient: See Block 5 of the Assistance Agreement																																												
4. Reporting Requirements: A. MANAGEMENT REPORTING <input checked="" type="checkbox"/> Research Performance Progress Report (RPPR) (RD&D Projects) <input type="checkbox"/> Progress Report (Non-RD&D Projects) <input checked="" type="checkbox"/> Special Status Report B. SCIENTIFIC/TECHNICAL REPORTING (Dissemination of results is required for RD&D projects. Reports & other S&T publications/products must be submitted using the appropriate DOE Announcement Notice (AN) located at: https://www.osti.gov/elink) <table border="0" style="width: 100%;"> <tr> <td style="text-align: center;"><u>Product</u></td> <td style="text-align: center;"><u>Announcement Notice (AN)</u></td> </tr> </table> <input checked="" type="checkbox"/> Scientific & Technical Reporting Product A. Journal Article-Accepted Manuscript DOE AN 241.3 B. Scientific/Technical Conference Paper/ Presentation or Proceedings DOE AN 241.3 C. Scientific/Technical Software & Manual DOE AN 241.4 D. Other STI (e.g., dissertation/thesis, see instructions) DOE AN 241.3 <input checked="" type="checkbox"/> Final Scientific/Technical Report C. FINANCIAL REPORTING <input checked="" type="checkbox"/> SF-425 Federal Financial Report D. CLOSEOUT REPORTING <input checked="" type="checkbox"/> Patent Certification <input checked="" type="checkbox"/> SF-428 & 428B Final Property Report <input type="checkbox"/> Other (see special instructions) E. OTHER REPORTING <input checked="" type="checkbox"/> Annual Indirect Cost Proposal <input type="checkbox"/> Audit of For-Profit Recipients <input checked="" type="checkbox"/> SF-428 Tangible Personal Property Report Forms Family <input checked="" type="checkbox"/> Other (see special instructions) <input checked="" type="checkbox"/> Subject Invention Reporting and Patent Reporting <input checked="" type="checkbox"/> Financial Conflict of Interest Disclosure (FCOI) <input checked="" type="checkbox"/> Organizational Conflict of Interest Disclosure <input checked="" type="checkbox"/> Current and Pending Support	<u>Product</u>	<u>Announcement Notice (AN)</u>	<table border="1"> <thead> <tr> <th style="text-align: center;">Frequency</th> <th style="text-align: center;">Addressees</th> </tr> </thead> <tbody> <tr> <td>O; See Note 5.a.</td> <td>https://pamspublic.science.energy.gov/webpamsepsexternal/login.aspx</td> </tr> <tr> <td>--</td> <td>https://pamspublic.science.energy.gov/webpamsepsexternal/login.aspx</td> </tr> <tr> <td>A</td> <td>https://www.fedconnect.net/fedconnect/default.aspx and an E-mail to the DOE Program Manager listed in Block 15 of the Assistance Agreement. 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O; See Note 5.f.	https://www.fedconnect.net/fedconnect/default.aspx																																											
O; See Note 5.g.	https://www.nist.gov/iedison																																											
O; See Note 5.h.	https://www.fedconnect.net/fedconnect/default.aspx and an E-mail to the DOE Program Manager, Contracting Officer, and Grants Management/Contract Specialist. The E-mail address is listed on the Assistance Agreement Continuation Sheet.																																											
O; See Note 5.i.	https://www.fedconnect.net/fedconnect/default.aspx and an E-mail to the DOE Program Manager, Contracting Officer, and Grants Management/Contract Specialist. The E-mail address is listed on the Assistance Agreement Continuation Sheet.																																											
O; See Note 5.j.	https://www.fedconnect.net/fedconnect/default.aspx and an email to the DOE Program Manager. The E-mail address is listed on the Assistance Agreement Continuation Sheet.																																											

FREQUENCY CODES AND DUE DATES:

- | | |
|--|---|
| A – Within 5 calendar days after events or as specified. | F – Final; within 90 calendar days after expiration or termination of the award. |
| Y – Yearly; within 90 days after the end of the reporting period. | Y180 – Yearly; within 180 days after the end of the recipient’s fiscal year. |
| Q – Quarterly; within 30 days after end of the reporting period. | S – Semiannually; within 30 days after end of reporting period. |
| O – Other; See special instructions for further details. | |

5. Special Instructions:

Notes:

- a. **Progress Reports and Renewal Applications:** Progress Reports must be submitted 90 days prior to the anticipated continuation funding date. Renewal applications must be submitted no later than six months prior to the scheduled expiration of the project period and must include a separate section that describes the results of work accomplished through the date of the renewal application (see 10 CFR 605.9). Renewal applications shall be submitted electronically through Grants.gov at <http://www.grants.gov>.
- b. **Scientific & Technical Reporting Products:** See Section B., **SCIENTIFIC/TECHNICAL REPORTING**, of the Federal Assistance Reporting Instructions, for submission instructions specific to each type of required scientific/technical deliverable.
- c. **Final Scientific/Technical Report:** In accordance with 2 CFR 200.344, the Final/Scientific Report must be submitted no later than 120 calendar days after the end date of the period of performance.
- d. **Federal Financial Report:** Quarterly and Final Federal Financial Reports (FFRs) must be submitted to the U.S. Department of Energy, Office of Science-Consolidated Service Center (CSC), Office of Financial Services, at the E-mail address listed and should only include financial information for awards issued by the CSC. Final FFRs must also be submitted through FedConnect. The FFR and instructions may be found at the web address included in Section C., Financial Reporting, of the attached instructions. After submitting a Final FFR for an individual award, do not continue to report the award on subsequent FFR submissions unless a correction is required. In accordance with 2 CFR 200.344, the Final FFR must be submitted no later than 120 calendar days after the end date of the period of performance.
- e. **Closeout Reporting:** In accordance with 2 CFR 200.344, closeout reports, such as the Patent Certification and Final Property Report, must be submitted no later than 120 calendar days after the end date of the period of performance.
- f. **SF-428:** See Section E. **OTHER REPORTING**, SF-428 Tangible Personal Property Report Forms Family, of the Federal Assistance Reporting Instructions, for specific guidance and submission schedules.
- g. **Subject Invention Reporting and Patent Reporting:** Failure to comply with the terms of the agreement may result in a loss of rights in Subject Inventions, including, but not limited to, forfeiture of retained rights. All Subject Inventions (conceived or first actually reduced to practice in the performance of the above identified agreement) must be timely reported at <https://www.nist.gov/iedison>. Invention reporting is required regardless of any patent protection sought or the subject matter (e.g. software invention). Any manuscript describing the invention for publication or of any on sale or public use planned for an invention must be promptly reported through iEdison. For assistance with iEdison, please contact iedison@nist.gov. For assistance regarding DOE’s administration of Subject Inventions or patents, please contact Intellectual Property Law (IPL) at (630) 283-7117 or Chicago-IP@science.doe.gov.
- h. **Financial Conflict of Interest Disclosure (FCOI):** FCOI means a situation in which an Investigator or the Investigator’s spouse or dependent children has a significant financial interest or financial relationship that could directly and significantly affect the design, conduct, reporting or funding of a project. Any individual participating on the project must disclose significant financial interests to the DOE. During the grant period of performance financial conflicts of interests must be reviewed and managed. Updated reports should be provided in writing to the DOE Contracting Officer, Grants Management/Contract Specialist, and Program manager at least annually. Additionally, during the grant period of performance the discovery or acquisition (e.g., through purchase, marriage, or inheritance) of any new significant financial interests should be disclosed in writing within 30 days to the DOE Contracting Officer, Grants Management/Contract Specialist, and Program Manager. Additionally, during the grant period of performance any FCOI which identifies any unmanaged or unmanageable FCOI should be reported on an ongoing basis to the DOE Contracting Officer, Grants Management/Contract Specialist, and Program Manager. Lastly, FCOI disclosure reporting requirements must flow to any subrecipient.
- i. **Organizational Conflict of Interest Disclosure:** Organizational conflict of interest means a situation where because of relationships with a parent company, affiliate, or subsidiary organization, the non-Federal entity is unable or appears to be unable to be impartial in conducting a procurement action involving a related organization (see 2 CFR 200.318(c)(2)). Prior to engaging in a procurement or transaction using project funds any potential or actual organizational conflict of interest must be disclosed in writing to the DOE Contracting Officer, Grants Management/Contract Specialist, and Program manager. During the grant period of performance, the discovery or acquisition of any new conflicts of interest should be disclosed in writing to the DOE Contracting Officer, Grants Management/Contract Specialist, and Program manager. Lastly, organizational conflict of interest disclosure reporting requirements must flow to any subrecipient.
- j. **Current and Pending Support:** Required current and pending support disclosure statements and corresponding curriculum vitae CVs or Biosketches must be submitted through FedConnect within (30) days of the individual joining the project or within thirty (30) days of a change in a disclosure statement in accordance with the award term FA-TC-0076-CH Current and Pending Support.

Federal Assistance Reporting Instructions

A. MANAGEMENT REPORTING

For awards involving RD&D a Research Performance Progress Report is required to be submitted. For all other awards a Progress Report is required to be submitted.

Either the Research Performance Progress Report (RPPR) or the Progress Report must be checked, but not both.

Research Performance Progress Report (RPPR) (RD&D Projects)

See the attachment entitled "Research Performance Progress Report" for instructions on what the Recipient is to include in the RPPR.

Progress Report (Non-RD&D Projects)

The Recipient must provide a concise narrative assessment of the status of work and include the following information and any other information identified under Special Instructions on the Federal Assistance Reporting Checklist:

1. The DOE award and report information:
 - a. The DOE Award Number (as it appears on the award face page)
 - b. Recipient Name (as it appears on the award face page)
 - c. Project Title
 - d. Project director/Principal investigator (PD/PI) Name, Title and Contact Information (e-mail address and phone number)
 - e. Name of Submitting Official, Title, and Contact Information (e-mail address and phone number), if other than PD/PI
 - f. Project Period (Start Date, End Date)
 - g. Report Submission Date
 - h. Reporting Period Start and End Date
2. A written comparison of the actual project accomplishments with the project goals and objectives established for the reporting period; if goals and/or objectives for the reporting period were not met, a detailed description of the variance shall be provided.
3. A discussion of what was accomplished under these goals and objectives established for this reporting period, including major activities, significant results, major findings or conclusions, key outcomes or other achievements. This section should not contain any proprietary data or other information not subject to public release. If such information is important to reporting progress, do not include the information, but include a note in the report advising the reader to contact the Principal Investigator or the Project Director for further information.
4. Cost Status. A comparison of the approved budget by budget period and the actual costs incurred during the reporting period shall be provided. If cost sharing is required, the cost breakdown shall show the DOE share, recipient share, and total costs.

5. Schedule Status. List milestones, anticipated completion dates and actual completion dates. If you submitted a project management plan with your application, you must use this plan to report schedule and budget variances. You may use your own project management system to provide this information.
6. Describe any changes during the reporting period in project approach and the reasons for these changes. Remember, significant changes to the project objectives and scope require prior approval by the Contracting Officer.
7. Describe any actual or anticipated problems or delays and any actions taken or planned to resolve them.
8. Describe any absence or changes of key personnel or changes in consortium/teaming arrangement during the reporting period.

Special Status Report

The recipient must report the following events by e-mail as soon as possible after they occur:

1. Developments that have a significant favorable impact on the project.
2. Problems, delays, or adverse conditions which materially impair the recipient's ability to meet the objectives of the award or which may require DOE to respond to questions relating to such events from the public. The recipient must report any of the following incidents and include the anticipated impact and remedial action to be taken to correct or resolve the problem/condition:
 - a. Any single fatality or injuries requiring hospitalization of five or more individuals.
 - b. Any significant environmental permit violation.
 - c. Any verbal or written Notice of Violation of any Environmental, Safety, and Health statutes.
 - d. Any incident which causes a significant process or hazard control system failure.
 - e. Any event which is anticipated to cause a significant schedule slippage or cost increase.
 - f. Any damage to Government-owned equipment in excess of \$50,000.
 - g. Any other incident that has the potential for high visibility in the media.

B. SCIENTIFIC/TECHNICAL REPORTING

The dissemination of scientific and technical information (STI) ensures public access to the results of federally funded research. STI refers to information products in any medium or format used to convey results, findings, or technical innovations from research and development or other scientific and technological work that are prepared with the intention of being preserved and disseminated in the broadest sense applicable (i.e., to the public or, in the case of controlled unclassified information or classified information, disseminated among

authorized individuals). Access to and archival of DOE-funded STI are managed by the DOE Office of Scientific and Technical Information (OSTI). For information about OSTI see <http://www.osti.gov>.

For more information on STI submittals, see <https://www.osti.gov/submit-sti>.

By properly notifying DOE OSTI about the published results, the information will be made publicly accessible and discoverable through DOE web-based products.

NOTE: SCIENTIFIC/TECHNICAL PRODUCTS INTENDED FOR PUBLIC RELEASE MUST NOT CONTAIN PROTECTED PERSONALLY IDENTIFIABLE INFORMATION (PII). PII is defined as any information about an individual which can be used to distinguish or trace an individual's identity. Some information that is considered to be PII is available in *public* sources such as telephone books, public websites, university listings, etc. This type of information is considered to be Public PII and includes, for example, first and last name, address, work telephone number, e-mail address, home telephone number, and general educational credentials. In contrast, *Protected* PII is defined as an individual's first name or first initial and last name in combination with any one or more of the following types of information: social security number, passport number, credit card numbers, clearances, bank numbers, biometrics, date and place of birth, mother's maiden name, criminal, medical and financial records, educational transcripts, etc., which could be mis-used if made publicly available.

1. Scientific and Technical Reporting Products

a. Journal Article-Accepted Manuscript

Recipients are encouraged to publish their work in scholarly journals. When/if a recipient has an article accepted for publication in a peer-reviewed journal they are required to announce the publication to OSTI as detailed below. This Reporting Requirement will be denoted with the Frequency "O – Other" on the Checklist.

Public access to peer-reviewed scholarly publications can be achieved by following these instructions. If the Recipient has a journal article accepted for publication which contains information/data produced under the award, then the Recipient must submit an AN 241.3 for the author's full-text version of the accepted manuscript, as described below, at the time the article meets the status of being "accepted" for publication. The Federal Government's right to use the data produced under a Federal award is established in 2 CFR 200.315(d), U.S. Government's retained license to published results of federally funded research.

Content. The Recipient is to announce to DOE the final peer-reviewed accepted manuscript (AM), i.e., the version of the journal article content that has been peer reviewed and accepted for publication in a journal, by providing a persistent link to the accepted manuscript on the recipient's publicly accessible institutional repository or submitting the full text (see Electronic Submission Process below). The Recipient should NOT submit the journal's published version of the article, i.e., the Recipient should NOT submit a copyrighted reprint. The Recipient should not submit the content of peer reviews or a commitment to publish. The Recipient should provide only the accepted manuscript content intended to be the published article.

DOE will make no additional review of the content of an AM because the AM is a version of the journal article with the content to be published (i.e., publicly released) by the journal publisher. The Recipient is responsible for ensuring the suitability of the content for public release. The terms and conditions of award provide that PII, proprietary, export control or classified information shall be protected. DOE may choose to defer providing public access until an administrative interval period has passed.

The Recipient must self-certify at the time of submission to DOE via E-Link that the content is appropriate and that it is not a copyrighted reprint, i.e., the final version of the published article. Recipients are reminded that the article is to include an acknowledgement of Federal support and a disclaimer.

Electronic Submission Process. The Journal Article-Accepted Manuscript must be announced via the DOE Energy Link System (E-Link) by submitting a completed DOE Announcement Notice (AN) 241.3 (<https://www.osti.gov/elink-2413>).

Within the AN 241.3, provide relevant journal information (article title, journal name, volume, issue, and any other pertinent publication information). Also provide a persistent link to the repository location of the accepted manuscript. An example of an acceptable persistent link is a URL to the specific location of the Journal Article-Accepted Manuscript hosted on a public, openly accessible university research publications website. If a persistent link is not available or if the website has access restrictions (preventing public access), then the Recipient must upload the full-text of the Accepted Manuscript using the AN 241.3 and E-Link instructions.

Full-text of accepted manuscripts must be in Adobe Portable Document Format (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Please refer to <https://www.osti.gov/stip/about/faqs/what-type-of-pdf-for-submission> for PDF document creation.

b. Scientific/Technical Conference Paper/Presentation or Proceedings

Recipients are encouraged to announce Scientific and Technical Conference Papers/Presentations if they are the primary means by which certain research results are disseminated or if they contain research results not already announced to DOE by the Recipient in technical reports, accepted journal articles, or other STI. This Reporting Requirement will be denoted with the Frequency “O – Other” on the Checklist. Instructions for how to announce such STI can be found below. In cases where the Recipient is required to create and submit a Conference Proceedings, the Frequency will be “F – Final.”

Content. The content should include: (1) Name of conference; (2) Location of conference; (3) Date of conference; and (4) Conference sponsor. Also include an acknowledgement of Federal support and a disclaimer.

Electronic Submission Process. Scientific/technical conference papers/presentations or proceedings must be submitted via the DOE Energy Link System (E-Link) with a completed DOE Announcement Notice (AN) 241.3 (<https://www.osti.gov/elink-2413>).

DOE will not review conference papers or presentations prior to making publicly available via OSTI since they were already presented in a public setting during a conference. The Recipient is responsible for ensuring the suitability of the content for public release. The terms and conditions of award provide that PII, proprietary, export control or classified information shall be protected. The Recipient must self-certify at the time of submission to DOE via E-Link that the content is appropriate for and has been publicly released.

Scientific/technical conference papers or proceedings that are textual documents must be submitted in Adobe Portable Document Format (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Please refer to <https://www.osti.gov/stip/about/faqs/what-type-of-pdf-for-submission> for PDF document creation. Audiovisual formats, such as PowerPoint (PPT) or video presentations, may be submitted as a Microsoft PPT file or audiovisual file by selecting the appropriate format on the AN 241.3 for the file to be uploaded or, in the case of videos posted on a publicly available website, by providing a link to the specific video. Format options and other instructions can be found at <http://www.osti.gov/stip/audiovisualsti>.

c. Scientific/Technical Software & Manual

Content. When a Recipient submits software to OSTI for dissemination, the following must be delivered: source code, the executable object code and the minimum support documentation needed by a competent user to understand and use the software and to be able to modify the software in subsequent development efforts, unless otherwise specified in the award.

Submission Process. The software submission must be accompanied by a completed DOE Announcement Notice (AN) 241.4 "Announcement of U.S. Department of Energy Computer Software." The announcement notice and instructions are available on E-Link at <http://www.osti.gov/estsc/241-4.jsp>. The AN 241.4 may be filled online and submitted electronically, with a printed copy or note accompanying the shipped software package.

Software (including user guide or manual) must be submitted on computer disk (CD) shipped via regular mail to:

Energy Science and Technology Software Center
P.O. Box 1020
Oak Ridge, TN 37831

d. Other STI

Recipients are encouraged to announce other forms of STI especially if they are the primary means by which certain research results are disseminated or if they contain research results not already announced to DOE by the Recipient in technical reports, accepted journal articles, or other STI. This Reporting Requirement will be denoted with the Frequency "O – Other" on the Checklist.

Other types of STI produced which may be used for public dissemination of project results include: dissertation/thesis, patent, book, or other similar products. These types

of STI may also be announced using DOE AN 241.3 by following instructions on the E-Link website (<http://www.osti.gov/elink-2413>).

2. Final Scientific/Technical Report

For R&D type awards where a Final Scientific/Technical Report is required, recipients are required to create and submit a final technical report. This Reporting Requirement will be denoted with the Frequency “F – Final” on the Federal Assistance Reporting Checklist.

The scientific/technical report is intended to increase the diffusion of knowledge gained by DOE-funded research, and all requirements shall be interpreted in that light.

Content. Research findings and other significant STI resulting from the DOE-sponsored R&D project shall be included in the final scientific/technical report, subject to the following provisions:

1. The scientific/technical report is to cover the entire project period. For Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards, a final scientific/technical report must be submitted after the completion of each phase, e.g., Phase I, Phase II, and sequential Phase II, as described in the Special Instructions.
2. STI that is publicly accessible need not be duplicated in the report if a citation with a link to where the information may be found is included in the report. For example, articles found in PAGES (i.e., DOE’s Public Access Gateway for Energy and Science, <http://www.osti.gov/pages/>) are accessible to the public.
3. Provide identifying information: the DOE award number; sponsoring program office; name of recipient; project title; name of project director/principal investigator; and consortium/teaming members.
4. Include an acknowledgment of Federal support and a disclaimer, which must appear in the publication of any material as noted in the terms and conditions.
5. Include any limitations on public release of the report, if applicable. If the document being submitted contains patentable material or protected data (i.e., data first produced in the performance of the award that is protected from public release for a period of time by terms of the award agreement, e.g., SBIR/STTR protected data), then (1) prominently display on the cover of the report any authorized distribution limitation notices, such as patentable material or protected data (e.g., SBIR/STTR protected data notice in the award terms) and (2) clearly identify patentable or protected data on each page of the report. Reports delivered without such notices may be deemed to have been furnished with unlimited rights, and the Government assumes no liability for the disclosure, use or reproduction of such reports. Any restrictive markings must also be noted in the distribution limitation section of the Announcement Notice (AN) 241.3 (see Electronic Submission Process, below). No protected PII should be included (see PII definition).
6. Provide an abstract or executive summary, which should be a minimum of one paragraph and written in terms understandable by an educated layperson. (Refer to <https://www.osti.gov/stip/about/statutory-authorities> for ANSI/NISO guidance as needed.) The abstract included in an application may serve as a model for this.

7. Summarize project activities for the entire period of funding, including original hypotheses, approaches used, and findings. Include, if applicable, facts, figures, analyses, and assumptions used during the life of the project to support the results in a manner that conveys to the scientific community the STI created during the project. To minimize duplication, the report may reference STI, including journal articles, that is publicly accessible. See also #2.
8. For guidance offered by the National Information Standards Organization on typical attributes and content of a technical report, if needed, refer to ANSI/NISO Z39.18-2005 (R2010), Scientific and Technical Reports – Preparation, Presentation, and Preservation (see <https://www.osti.gov/stip/about/statutory-authorities>).

Electronic Submission Process. The final scientific/technical report must be submitted via the DOE Energy Link System (E-Link) with a completed electronic version of DOE Announcement Notice (AN) 241.3, “U.S. Department of Energy (DOE), Announcement of Scientific and Technical Information (STI).” The Recipient can complete, upload, and submit the DOE AN 241.3 online via E-Link (<https://www.osti.gov/elink-2413>).

The Recipient must mark the appropriate block in the “Intellectual Property/Distribution Limitations” Section of the DOE AN 241.3. Reports that are electronically uploaded must not contain any Protected Personally Identifiable Information (PII), limited rights data, classified information, information subject to export control classification, or other information not subject to public release. Limited rights data means data (other than computer software) developed at private expense that embody trade secrets or are commercial or financial and confidential or privileged. SBIR/STTR Protected Data and other data subject to statutory data protection authorized by the award may be submitted, provided such data is properly marked and identified during submission. Submissions must not contain any “Proprietary”, “Confidential” or “Business Sensitive” markings or similar restrictive markings not authorized by the applicable government agreement; it is acknowledged that DOE has the right to cancel or ignore such markings. During the upload process, the Recipient must self-certify that no content of this nature is being submitted. Recipients should contact the Contracting Officer or Technical Project Officer for the award with any questions about this requirement. Text documents must be submitted in Adobe Portable Document Format (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Please refer to <https://www.osti.gov/stip/about/faqs/what-type-of-pdf-for-submission> for PDF document creation.

C. FINANCIAL REPORTING

The Recipient must complete the SF-425 as identified on the Reporting Checklist in accordance with the report instructions. A fillable version of the form is available at <https://www.grants.gov/web/grants/forms/post-award-reporting-forms.html>

D. CLOSEOUT REPORTS

Final Invention and Patent Report

The Recipient must provide a DOE Form 2050.11, “Invention Certification For Federal Award” This form is available at <https://science.osti.gov/OCC-CH/Resources>

Final Property Report

See Instructions under **SF-428 Tangible Personal Property Report Forms Family** below.

E. OTHER REPORTING

Annual Indirect Cost Proposal and Reconciliation

Requirement. In accordance with the applicable cost principles, the recipient must submit an annual indirect cost proposal, reconciled to its financial statements, within six months after the close of the recipient's fiscal year, unless the award is based on a predetermined or fixed indirect rate(s), or a fixed amount for indirect or facilities and administration (F&A) costs. The format and content of the indirect cost proposal should follow the Defense Contract Audit Agency's (DCAA) ICE Model in order to be considered an adequate proposal. DCAA's ICE Model can be found on the DCAA website at: <https://www.dcaa.mil/Checklists-Tools/ICE-Model/>.

Cognizant Agency. The Recipient must submit its annual indirect cost proposal directly to the cognizant agency for negotiating and approving its indirect costs. If the DOE awarding office is the cognizant agency, the Recipient must submit their annual indirect cost proposal to <https://www.fedconnect.net/fedconnect/default.aspx>

Audit of For-Profit Recipients

As required by 2 CFR parts 910.500 through 910.521, a For-Profit entity which expends \$750,000 or more during their fiscal year in DOE awards must have a compliance audit conducted for that year.

Submission: The compliance audit report(s) must be submitted to DOE within the earlier of 30 days after receipt of the auditor's report(s) or nine months after the end of the audit period (Recipient's fiscal year-end). The compliance audit report must be submitted, along with audited financial statements (if applicable), to the appropriate DOE Contracting Officer at <https://www.fedconnect.net/fedconnect/default.aspx> as well as to the DOE Office of the Chief Financial Officer (CFO) at DOE-Audit-Submission@hq.doe.gov .

SF-428 Tangible Personal Property Report Forms Family

Requirement. The SF-428 is a forms family consisting of 5 forms: the SF-428, SF-428-A, SF-428-B, SF-428-C and SF-428S. Fillable versions of the SF-428 forms are **temporarily** available at https://www.reginfo.gov/public/do/PRAViewIC?ref_nbr=201002-3090-001&icID=192059. The SF-428 is the cover page and the submitter attaches the appropriate form or forms as listed on the SF-428.

- The SF-428A is the Annual report, due Oct 30th of each calendar year.
- The SF-428B is the Final Award Closeout Report, due 90 calendar days after completion or termination of the award.
- The SF-428C is the Disposition Report/Request.

- The SF-428S is the supplemental form for the SF-428-A, SF-428-B, and SF-428-C.

If at any time during the award the Recipient is provided Government-furnished property or acquires property with project funds and the award specifies that the property vests in the Federal Government (i.e. federally owned property), the Recipient must submit an annual inventory of this property to the DOE Administrator using the SF-428 and SF-428-A forms at the address on page 1 of this checklist **no later than October 30th of each calendar year**, to cover an annual reporting period ending on the preceding September 30th. The SF-428 and SF-428-B reports are required 90 calendar days after completion or termination of award to complete the closeout process.

Content of Inventory. As required on the SF-428-A and SF-428-S forms, the inventory must include a description of the property, tag number, acquisition date, and acquisition cost, if purchased with project funds. The location of property should be listed under the Comments section. The report must list all federally owned property, including property located at subcontractor's facilities or other locations.

RESEARCH PERFORMANCE PROGRESS REPORT (RPPR)

Standard Cover Page Data Elements and Reporting Categories

The standard cover page data elements shown below, as well as mandatory and optional components comprise the complete research performance progress report format. Each category in the RPPR is a separate reporting component. Each component is marked to indicate if it is optional or mandatory. Mandatory components must be addressed in each report, optional are at your discretion. For Optional components, if you have nothing significant to report during the reporting period on a question or item, state "Nothing to Report," if there are reportable items, please submit according to the instructions for each section. Onscreen instructions for completing the report are provided in the Portfolio Analysis and Management System (PAMS). Major sections of the progress report, marked here with Roman Numerals, are separate pages inside the PAMS system. Each section must be marked as complete in PAMS before the report can be submitted to DOE. For some sections, information provided in this progress report will be used to prepopulate the next progress report required for the award. Information from the Products section will prepopulate the Renewal Proposal Products section of future renewal proposals.

I. COVER PAGE DATA ELEMENTS: All fields except Recipient Award ID Number are prepopulated by PAMS

- a. Recipient Award Identification Number (an optional identifying number issued by the recipient and used for internal processing or reporting)
- b. Federal Agency and Organization Element to Which Report is Submitted (prepopulated)
- c. Federal Grant or Other Identifying Number Assigned by Agency (prepopulated)
- d. Project Title (prepopulated)
- e. PD/PI Name, Title and Contact Information (e-mail address and phone number) (prepopulated)
- f. Name of Submitting Official, Title, and Contact Information (e-mail address and phone number), if other than PD/PI (prepopulated)
- g. Submission Date (prepopulated)
- h. Recipient Organization (Name and Address) (prepopulated)
- i. Project/Grant Period (Start Date, End Date) (prepopulated)
- j. Reporting Period End Date (prepopulated)
- k. Report Term or Frequency (annual, semi-annual, quarterly, final, other) (prepopulated)

II. ACCOMPLISHMENTS: Mandatory

What was done? What was learned?

The information provided in this section allows the agency to assess whether satisfactory progress has been made during the reporting period. The PI is reminded that the grantee is required to obtain prior written approval from the Contracting Officer whenever there are significant changes in the project or its direction. Requests for prior written approval must be submitted to the Contracting Officer.

a. What are the major goals and objectives of this project?

List the major goals of the project as stated in the approved application or as approved by the agency. Describe the proposed technical approach to obtain those goals. If the application lists milestones/target dates for important activities or phases of the project, identify these dates and show actual completion dates or the percentage of completion. Generally, the goals will not change from one reporting period to the next. However, if the awarding agency approved changes to the goals during the reporting period, list the revised goals and objectives. Also explain any significant changes in approach or methods from the agency approved application or plan.

b. What was accomplished under these goals?

For this reporting period describe: 1) major activities; 2) specific objectives; 3) significant results or key outcomes, including major findings, developments, or conclusions (both positive and negative); and/or 4) other achievements. Include a discussion of stated goals not met. As the project progresses, the emphasis in reporting in this section should shift from reporting activities to reporting accomplishments.

c. What opportunities for training and professional development has the project provided?

Describe opportunities for training and professional development provided to anyone who worked on the project or anyone who was involved in the activities supported by the project. "Training" activities are those in which individuals with advanced professional skills and experience assist others in attaining greater proficiency. Training activities may include, for example, courses or one-on-one work with a mentor. "Professional development" activities result in increased knowledge or skill in one's area of expertise and may include workshops, conferences, seminars, study groups, and individual study. Include participation in conferences, workshops, and seminars not listed under major activities.

If the project was not intended to provide training and professional development opportunities or there is nothing significant to report during this reporting period, state "Nothing to Report."

d. How have the results been disseminated to communities of interest?

Describe how the results have been disseminated to communities of interest. Include any outreach activities that have been undertaken to reach members of communities who are not usually aware of these research activities, for the purpose of enhancing public understanding and increasing interest in learning and careers in science, technology, and the humanities.

If there is nothing significant to report during this reporting period, state "Nothing to Report."

e. What do you plan to do during the next reporting period to accomplish the goals and objectives?

Describe briefly what you plan to do during the next reporting period to accomplish the goals and objectives.

If there are no changes to the agency-approved application or plan for this project or if this is the final report, state "Nothing to Report."

III. PRODUCTS: MANDATORY, if Products Exist

What has the project produced?

Publications are the characteristic product of research. Agencies evaluate what the publications demonstrate about the excellence and significance of the research and the efficacy with which the results are being communicated to colleagues, potential users, and the public, not the number of publications. Many projects (though not all) develop significant products other than publications. Agencies assess and report both publications and other products to Congress, communities of interest, and the public.

List any products resulting from the project during the reporting period. Examples of products include: publications, conference papers, and presentations; website(s) or other Internet site(s); technologies or techniques; inventions, patent applications, and/or licenses; and other products, such as data or databases, physical collections, audio or video products, software or NetWare, models, educational aids or curricula, instruments or equipment, research material, interventions (e.g., clinical or educational), new business creation or any other public release of information related to the project.

If there is nothing significant to report during this reporting period, state "Nothing to Report."

a. Publications, conference papers, and presentations

Report only the major publication(s) resulting from the work under this award. There is no restriction on the number. However, Agencies are interested in only those publications that most reflect the work under this award in the following categories:

- i. **Journal publications.** List peer-reviewed articles or papers appearing in scientific, technical, or professional journals. Include any peer-reviewed publication in the periodically published proceedings of a scientific society, a conference, or the like. A publication in the proceedings of a one-time conference, not part of a series, should be reported under "Books or other non-periodical, one-time publications."

Identify for each publication: Author(s); title; journal; volume; year; page numbers; status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no). Also see instructions under **B. Scientific/Technical Reporting** regarding the submission of accepted manuscripts and other STI as appropriate.

- ii. **Books or other non-periodical, one-time publications.** Report any book, monograph, dissertation, abstract, or the like published as or in a separate publication, rather than a periodical or series. Include any significant publication in the proceedings of a one-time conference or in the report of a one-time study, commission, or the like. Identify for each one-time publication: author(s); title; editor; title of collection, if applicable; bibliographic information; year; type of publication (book, thesis or dissertation, other); status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no).
- iii. **Other publications, conference papers and presentations.** Identify any other publications, conference papers and/or presentations not reported above. Specify the status of the publication as noted above.

b. Website(s) or other Internet site(s)

List the URL for any Internet site(s) that disseminates the results of the research activities. A short description of each site should be provided. It is not necessary to include the publications already specified above in this section.

c. Technologies or techniques

Identify technologies or techniques that have resulted from the research activities. Describe the technologies or techniques and how they are being shared.

d. Inventions, patent applications, and/or licenses

Identify inventions, patent applications with date, and/or licenses that have resulted from the research. Submission of this information as part of an interim or final Research Performance Progress Report is not a substitute for any other invention reporting required under the terms and conditions of an award.

e. Other products

Identify any other significant products that were developed under this project. Describe the product and how it is being shared. Examples of other products are: Data or databases; Physical collections; Audio or video products; Software or NetWare; Models; Educational aids or curricula; Instruments or equipment; Research material (e.g., germplasm, cell lines, DNA probes, animal models); Interventions (e.g. clinical, educational); new business creation; and Other.

IV. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS: MANDATORY

Who has been involved?

Agencies need to know who has worked on the project to gauge and report performance in promoting partnerships and collaborations. The following information on participants and other collaborating organizations during this reporting period must be provided:

1. Participants

What individuals have worked on the project?

Provide the following information for: (1) Project director(s)/Principal investigator(s) (PDs/PIs); and (2) each person who has worked, and was funded by the project, at least one person month per year on the project during the reporting period, regardless of the source of compensation (a person month equals approximately 160 hours of effort). Please note that such reporting does not constitute a formal institutional report of effort on the project, but rather is used by agency program staff to evaluate the progress of the project during a given reporting period.

Provide the name and identify the role the person played in the project. Do NOT include any other identifying information on individuals. Indicate the nearest whole person month (Calendar, Academic, Summer) that the individual worked on the project. Show the most senior role in which the person has worked on the project for any significant length of time. For example, if an undergraduate student graduates, enters graduate school, and continues to

work on the project, show that person as a graduate student, preferably explaining the change in involvement. Describe how this person contributed to the project and with what funding support. If information is unchanged from a previous submission, provide the name only and indicate “no change”. Identify whether this person is collaborating internationally. Specifically whether the person collaborating with an individual located in a foreign country and whether the person had traveled to the foreign country as part of that collaboration and duration of stay. The foreign country(ies) should be identified.

Example:

- 1) **Name:** Mary Smith
- 2) **Project Role:** Graduate Student
- 3) **Nearest person month worked:** 5
- 4) **Contribution to Project:** Ms. Smith has performed work in the area of combined error-control and constrained coding.
- 5) **Funding Support:** The Ford Foundation (Complete only if the funding provided from other than this award.)
- 6) **Collaborated with individual in foreign country:** Yes
- 7) **Country(ies) of foreign collaborator:** China
- 8) **Travelled to foreign country as part of foreign collaboration:** Yes
- 9) **If traveled to foreign country(ies), duration of stay:** 5 months

2. Partners

What other organizations have been involved as partners?

Describe partner organizations – academic institutions, other nonprofits, industrial or commercial firms, state or local governments, schools or school systems, or other organizations (foreign or domestic) – that have been involved with the project. Partner organizations may provide financial or in-kind support, supply facilities or equipment, collaborate in the research, exchange personnel, or otherwise contribute.

Provide the following information for each partnership:

1. Organization Name:
2. Location of Organization: (if foreign location, list country)
3. Partner’s contribution to the project: (identify one or more)
 - i. Financial support;
 - ii. In-kind support (e.g., partner makes software, computers, equipment, etc., available to project staff);
 - iii. Facilities (e.g., project staff use the partner’s facilities for project activities);
 - iv. Collaborative research (e.g., partner’s staff work with project staff on the project);
 - v. Personnel exchanges (e.g., project staff and/or partner’s staff use each other’s facilities, work at each other’s site).
 - vi. Other
4. More detail on partner and contribution (foreign or domestic).

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

3. Other Collaborators

Have other collaborators or contacts been involved?

Some significant collaborators or contacts within the recipient's organization may not be covered by "What people have worked on the project?" Likewise, some significant collaborators or contacts outside the recipient's organization may not be covered under "What other organizations have been involved as partners?"

For example, describe any significant:

1. collaborations with others within the recipient's organization, especially interdepartmental or interdisciplinary collaborations;
2. collaborations or contact with others outside the organization; and
3. collaborations or contacts with others outside the United States or with an international organization.

Identify the state(s), U.S. territory(ies), or country(ies) of collaborations or contacts.

It is likely that many recipients will have no other collaborators or contacts to report.

If there is nothing significant to report during this reporting period, state "Nothing to Report."

V. IMPACT: Optional (but strongly recommended)

What is the impact of the project? How has it contributed?

Over the years, this base of knowledge, techniques, people, and infrastructure is drawn upon again and again for application to commercial technology and the economy, to health and safety, to cost-efficient environmental protection, to the solution of social problems, to numerous other aspects of the public welfare, and to other fields of endeavor.

The taxpaying public and its representatives deserve a periodic assessment to show them how the investments they make benefit the nation. Through this reporting format, and especially this section, recipients provide that assessment and make the case for Federal funding of research and education.

Agencies use this information to assess how their research programs: increase the body of knowledge and techniques; enlarge the pool of people trained to develop that knowledge and techniques or put it to use; and improve the physical, institutional, and information resources that enable those people to get their training and perform their functions.

This component will be used to describe ways in which the work, findings, and specific products of the project have had an impact during this reporting period. Describe distinctive contributions, major accomplishments, innovations, successes, or any change in practice or behavior that has come about as a result of the project relative to: the development of the principal discipline(s) of the project; other disciplines; the development of human resources; teaching and educational experiences; physical, institutional, and information resources that form infrastructure; technology transfer (include transfer of results to entities in government or industry, adoption of new practices, or instances where research has led to the initiation of a startup company); society beyond science and technology; or foreign countries.

a. What was the impact on the development of the principal discipline(s) of the project?

Describe how findings, results, and techniques that were developed or extended, or other products from the project made an impact or are likely to make an impact on the base of

knowledge, theory, and research and/or pedagogical methods in the principal disciplinary field(s) of the project. Summarize using language that a lay audience can understand (*Scientific American* style). How the field or discipline is defined is not as important as covering the impact the work has had on knowledge and technique. Make the best distinction possible, for example, by using a “field” or “discipline”, if appropriate, that corresponds with a single academic department (i.e., physics rather than nuclear physics).

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

b. What was the impact on other disciplines?

Describe how the findings, results, or techniques that were developed or improved, or other products from the project made an impact or are likely to make an impact on other disciplines.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

c. What was the impact on the development of human resources?

Describe how the project made an impact or is likely to make an impact on human resource development in science, engineering, and technology. For example, how has the project: provided opportunities for research and teaching in the relevant fields; improved the performance, skills, or attitudes of members of underrepresented groups that will improve their access to or retention in research, teaching, or other related professions; developed and disseminated new educational materials; provided scholarships; or provided exposure to science and technology for practitioners, teachers, young people, or other members of the public?

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

d. What was the impact on physical, institutional, and information resources that form infrastructure?

Describe ways, if any, in which the project made an impact, or is likely to make an impact, on physical, institutional, and information resources that form infrastructure, including: physical resources such as facilities, laboratories, or instruments; institutional resources (such as establishment or sustenance of societies or organizations); or information resources, electronic means for accessing such resources or for scientific communication, or the like.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

e. What was the impact on technology transfer?

Describe ways in which the project made an impact, or is likely to make an impact, on commercial technology or public use, including: transfer of results to entities in government or industry; instances where the research has led to the initiation of a start-up company; or adoption of new practices.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

f. What was the impact on society beyond science and technology?

Describe how results from the project made an impact, or are likely to make an impact, beyond the bounds of science, engineering, and the academic world on areas such as: improving public knowledge, attitudes, skills, and abilities; changing behavior, practices, decision making, policies (including regulatory policies), or social actions; or improving social, economic, civic,

or environmental conditions.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

g. What percentage of the award’s budget was spent in foreign country(ies)?

Describe what percentage of the award’s budget was spent in foreign country(ies). If more than one foreign country is involved, identify the distribution between the foreign countries.

U.S.-based recipients should provide the percentage of the budget spent in the foreign country(ies) and/or, if applicable, the percentage of the budget obligated to foreign entities as first-tier subawards.

Recipients that are not U.S.-based should provide the percentage of the direct award received, excluding all first-tier subawards to U.S. entities. If applicable, provide separately the percentage of the budget obligated to non-U.S. entities as first-tier subawards.

VI. CHANGES/PROBLEMS: Optional (but strongly encouraged); Carryover Amount Mandatory

The PD/PI is reminded that the grantee is required to obtain prior written approval from the Contracting Officer whenever there are significant changes in the project or its direction. Requests for prior written approval must be submitted to the Contracting Officer. If not previously reported in writing, provide the following additional information, if applicable: Changes in approach and reasons for change; Actual or anticipated problems or delays and actions or plans to resolve them; Changes that have a significant impact on expenditures; Significant changes in use or care of animals, human subjects, and/or biohazards.

a. Changes in approach and reasons for change

Describe any changes in approach during the reporting period and reasons for these changes. Remember that significant changes in objectives and scope require prior approval of the Contracting Officer.

b. Actual or anticipated problems or delays and actions or plans to resolve them

Describe problems or delays encountered during the reporting period and actions or plans to resolve them.

c. Changes that have a significant impact on expenditures

Describe changes during the reporting period that may have a significant impact on expenditures, for example, delays in hiring staff or favorable developments that enable meeting objectives at less cost than anticipated.

d. Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents

Describe significant deviations, unexpected outcomes, or changes in approved protocols for the use or care of human subjects, vertebrate animals, biohazards and/or select agents during the reporting period. If required, were these changes approved by the applicable institution committee and reported to the agency? Also specify the applicable Institutional Review Board/Institutional Animal Care and Use Committee approval dates.

e. Change of primary performance site location from that originally proposed

Identify any change to the primary performance site location identified in the proposal, as originally submitted.

f. Carryover Amount

Provide an estimate of the carryover amount expected at the reporting period end date.

VII. DEMOGRAPHIC INFORMATION: Mandatory (providing email addresses)

Provide email addresses for each participant listed in the participant section of this report. Once you submit this report, PAMS will send the participants not registered in PAMS an email inviting them to register and complete their PAMS person profiles so that any demographic information provided can be collected. Entering demographic information is optional for participants. Demographics are collected for a variety of purposes, including the following:

- to gauge whether our programs and other opportunities are fairly reaching and benefiting everyone regardless of demographic category;
- to ensure that those in under-represented groups have the same knowledge of and access to programs, meetings, vacancies, and other research and educational opportunities as everyone else;
- to gauge and report performance in promoting partnerships and collaborations;
- to assess involvement of international investigators or students in work we support;
- to track the evolution of changing science, technology, engineering and mathematics (STEM) fields at different points in the pipeline (e.g., medicine and law demographics have recently changed dramatically);
- to raise investigator and agency staff awareness of the involvement of under-represented groups in research;
- to encourage the development of creative approaches for tapping into the full spectrum of talent of the STEM workforce;
- to respond to external requests for data of this nature from a variety of sources, including the National Academies, Congress, etc.; and
- to respond to legislatively-required analysis of workforce dynamics. Legislation requires at least one agency to routinely estimate scientific workforce needs. This analysis is accomplished through reviewing demographic data submitted for the existing workforce.

Demographic data (i.e., gender, ethnicity, race, and disability status) is provided directly by significant contributors with the understanding that submission of such data is voluntary. There are no adverse consequences if the data are not provided. Confidentiality of demographic data is in accordance with agency's policies and practices for complying with the requirements of the Privacy Act.

Gender: Male
 Female
 Do not wish to provide

Ethnicity: Hispanic or Latina/o
Not-Hispanic or not-Latina/o
Do not wish to provide

Race (select one or more): American Indian or Alaska Native
Asian
Black or African American
Native Hawaiian or other Pacific Islander
White
Do not wish to provide

Disability Status:

Yes (check yes if any of the following apply to you)

- Deaf or serious difficulty hearing
- Blind or serious difficulty seeing even when wearing glasses
- Serious difficulty walking or climbing stairs
- Other serious disability related to a physical, mental, or emotional condition.

No

Do not wish to provide

This measure is designed as a binary measure; it encompasses all self-reported disabilities. Please do not use it to report the number of individuals who have different types of disabilities (e.g., hearing impairments).

Demographic data is only disclosed to the person providing the data: DOE can only access the data in aggregate form.

VIII. SPECIAL REPORTING REQUIREMENTS: Mandatory

Respond to any special reporting requirements specified in the award terms and conditions, as well as any award specific reporting requirements.



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Standard Intellectual Property (IP) Provisions for Financial Assistance Awards issued ON OR AFTER October 1, 2021

Recipient Name	UNIVERSITY OF CALIFORNIA, SANTA BARBARA
Award Number	DE-SC0022198
Type of Award	Grant
Type of Project	Research Development or Demonstration (RD&D)
Type of Recipient	Domestic Nonprofit Organization (e.g. Educational Institutions)
US Manufacture/DEC	US Comp. (S&E DEC)
Special Data Statute	None -- No Special Data (Unlimited Rights)
Data Management Plan	N/A or Included Elsewhere
Supplemental Instructions	None
DOE IP Clause Number	GNP-821-US
Data Rights	Data General (Unlimited Rights)
Patent Rights	Bayh-Dole
USM Requirements	U.S. Comp. – S&E DEC

2 CFR 200.315 Intangible Property

Provisions 37 CFR 401.14 DOE Modified Patent Rights Clause*
Data Management Plan

The recipient and any subrecipients are subject to the U.S. Competitiveness Provision set forth herein that requires products embodying or made through a Subject Invention be substantially manufactured in the U.S. Implementation of the U.S. Competitiveness Provision for domestic small businesses and nonprofits is through the Determination of Exceptional Circumstances (DEC) under the Bayh-Dole Act to Further Promote Domestic Manufacture of DOE Science and Energy Technologies executed by DOE on June 7, 2021. A copy of the DEC is available at <https://www.energy.gov/gc/determination-exceptional-circumstances-decs>. For all other types of entities, the implementation of the U.S. Competitiveness Provision is through DOE patent waivers and policy.

In reading these provisions, any reference to “contractor” shall mean “recipient,” and any reference to “contract” or “subcontract” shall mean “award” or “subaward.”

Failure to comply with the terms of the agreement may result in a loss of rights in Subject Inventions, including, but not limited to, forfeiture of retained rights. All Subject Inventions (conceived or first actually reduced to practice in the performance of the above identified agreement) must be timely reported at <https://www.nist.gov/iedison>. Invention reporting is required regardless of any patent protection sought or the subject matter (e.g. software invention). Any manuscript describing the invention for publication or of any on sale or public use planned for an invention must be promptly reported through iEdison. For assistance with iEdison, please contact iedison@nist.gov. For assistance regarding DOE’s administration of Subject Inventions or patents, please contact Intellectual Property Law (IPL) at (630) 283-7117 or Chicago-IP@science.doe.gov.



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2 CFR 200.315 Intangible Property

(a) Title to intangible property (see §200.59 Intangible property) acquired under a Federal award vests upon acquisition in the non-Federal entity. The non-Federal entity must use that property for the originally-authorized purpose, and must not encumber the property without approval of the Federal awarding agency. When no longer needed for the originally authorized purpose, disposition of the intangible property must occur in accordance with the provisions in §200.313 Equipment paragraph (e).

(b) The non-Federal entity may copyright any work that is subject to copyright and was developed, or for which ownership was acquired, under a Federal award. The Federal awarding agency reserves a royalty-free, nonexclusive and irrevocable right to reproduce, publish, or otherwise use the work for Federal purposes, and to authorize others to do so.

(c) The non-Federal entity is subject to applicable regulations governing patents and inventions, including governmentwide regulations issued by the Department of Commerce at 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Awards, Contracts and Cooperative Agreements."

(d) The Federal government has the right to:

- (1) Obtain, reproduce, publish, or otherwise use the data produced under a Federal award; and
- (2) Authorize others to receive, reproduce, publish, or otherwise use such data for Federal purposes.

(e) Freedom of Information Act (FOIA).

(1) In response to a Freedom of Information Act (FOIA) request for research data relating to published research findings produced under a Federal award that were used by the Federal government in developing an agency action that has the force and effect of law, the Federal awarding agency must request, and the non-Federal entity must provide, within a reasonable time, the research data so that they can be made available to the public through the procedures established under the FOIA. If the Federal awarding agency obtains the research data solely in response to a FOIA request, the Federal awarding agency may charge the requester a reasonable fee equaling the full incremental cost of obtaining the research data. This fee should reflect costs incurred by the Federal agency and the non-Federal entity. This fee is in addition to any fees the Federal awarding agency may assess under the FOIA (5 U.S.C. 552(a)(4)(A)).

(2) Published research findings means when:

(i) Research findings are published in a peer-reviewed scientific or technical journal; or

(ii) A Federal agency publicly and officially cites the research findings in support of an agency action that has the force and effect of law. "Used by the Federal government in developing an agency action that has the force and effect of law" is defined as when an agency publicly and officially cites the research findings in support of an agency action that has the force and effect of law.

(3) Research data means the recorded factual material commonly accepted in the scientific community as necessary to validate research findings, but not any of the following: preliminary analyses, drafts of scientific papers, plans for future research, peer reviews, or communications with colleagues. This "recorded" material excludes physical objects (e.g., laboratory samples). Research data also do not include:

(i) Trade secrets, commercial information, materials necessary to be held confidential by a researcher until they are published, or similar information which is protected under law; and

(ii) Personnel and medical information and similar information the disclosure of which would constitute a



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clearly unwarranted invasion of personal privacy, such as information that could be used to identify a particular person in a research study.



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37 CFR 401.14 DOE Modified Patent Rights Clause*

**the standard patent rights clause at 37 CFR 401.14 has been modified to (1) reflect DOE required subcontracting instructions pursuant to 37 CFR 401.5(a) as well as the deletion of the definition of contractor that does not apply based on the subcontracting instructions; (2) change acquisition terms of contractor, contract and subcontract to financial assistance terms of recipient, award, subaward or agreement pursuant to 37 CFR 401.5(c); and (3) include paragraph (m) U.S. competitiveness provision pursuant to the Determination of Exceptional Circumstances under the Bayh-Dole Act to Further Promote Domestic Manufacture of DOE Science and Energy Technologies executed by DOE on June 7, 2021.*

(a) Definitions

(1) Invention means any invention or discovery which is or may be patentable or otherwise protectable under Title 35 of the United States Code, or any novel variety of plant which is or may be protected under the Plant Variety Protection Act (7 U.S.C. 2321 et seq.).

(2) Subject invention means any invention of the Recipient conceived or first actually reduced to practice in the performance of work under this agreement, provided that in the case of a variety of plant, the date of determination (as defined in section 41(d) of the Plant Variety Protection Act, 7 U.S.C. 2401(d)) must also occur during the period of agreement performance.

(3) Practical Application means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are, to the extent permitted by law or government regulations, available to the public on reasonable terms.

(4) Made when used in relation to any invention means the conception or first actual reduction to practice of such invention.

(5) Small Business Firm means a small business concern as defined at section 2 of Pub. L. 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration. For the purpose of this clause, the size standards for small business concerns involved in government procurement and subcontracting at 13 CFR 121.3-8 and 13 CFR 121.3-12, respectively, will be used.

(6) Nonprofit Organization means a university or other institution of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 (26 U.S.C. 501(c) and exempt from taxation under section 501(a) of the Internal Revenue Code (25 U.S.C. 501(a)) or any nonprofit scientific or educational organization qualified under a state nonprofit organization statute.

(7) The term statutory period means the one-year period before the effective filing date of a claimed invention during which exceptions to prior art exist per 35 U.S.C. 102(b) as amended by the Leahy-Smith America Invents Act, Public Law 112-29.

(b) Allocation of Principal Rights

The Recipient may retain the entire right, title, and interest throughout the world to each subject invention subject to the provisions of this clause and 35 U.S.C. 203. With respect to any subject invention in which the Recipient retains title, the Federal government shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the



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world.

(c) Invention Disclosure, Election of Title and Filing of Patent Application by Recipient

(1) The Recipient will disclose each subject invention to the Federal Agency within two months after the inventor discloses it in writing to Recipient personnel responsible for patent matters. The disclosure to the agency shall be in the form of a written report and shall identify the agreement under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding to the extent known at the time of the disclosure, of the nature, purpose, operation, and the physical, chemical, biological or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to the agency, the Recipient will promptly notify the agency of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the Recipient.

(2) The Recipient will elect in writing whether or not to retain title to any such invention by notifying the Federal agency within two years of disclosure to the Federal agency. However, in any case where a patent, a printed publication, public use, sale, or other availability to the public has initiated the one year statutory period wherein valid patent protection can still be obtained in the United States, the period for election of title may be shortened by the agency to a date that is no more than 60 days prior to the end of the statutory period.

(3) The Recipient will file its initial patent application on a subject invention to which it elects to retain title within one year after election of title or, if earlier, prior to the end of any statutory period wherein valid patent protection can be obtained in the United States after a publication, on sale, or public use. If the Recipient files a provisional application as its initial patent application, it shall file a non-provisional application within 10 months of the filing of the provisional application. The Recipient will file patent applications in additional countries or international patent offices within either ten months of the first filed patent application or six months from the date permission is granted by the Commissioner of Patents to file foreign patent applications where such filing has been prohibited by a Secrecy Order.

(4) For any subject invention with Federal agency and Recipient co-inventors, where the Federal agency employing such co-inventor determines that it would be in the interest of the government, pursuant to 35 U.S.C. 207(a)(3), to file an initial patent application on the subject invention, the Federal agency employing such co-inventor, at its discretion and in consultation with the Recipient, may file such application at its own expense, provided that the Recipient retains the ability to elect title pursuant to 35 U.S.C. 202(a).

(5) Requests for extension of the time for disclosure, election, and filing under paragraphs (1), (2), and (3) of this clause may, at the discretion of the Federal agency, be granted. When a Recipient has requested an extension for filing a non-provisional application after filing a provisional application, a one-year extension will be granted unless the Federal agency notifies the Recipient within 60 days of receiving the request.

(d) Conditions When the Government May Obtain Title

The Recipient will convey to the Federal agency, upon written request, title to any subject invention -

(1) If the Recipient fails to disclose or elect title to the subject invention within the times specified in paragraph (c) of this clause, or elects not to retain title.

(2) In those countries in which the Recipient fails to file patent applications within the times specified in



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paragraph (c) of this clause; provided, however, that if the Recipient has filed a patent application in a country after the times specified in paragraph (c) of this clause, but prior to its receipt of the written request of the Federal agency, the Recipient shall continue to retain title in that country.

(3) In any country in which the Recipient decides not to continue the prosecution of any non-provisional patent application for, to pay a maintenance, annuity or renewal fee on, or to defend in a reexamination or opposition proceeding on, a patent on a subject invention.

(4) Upon breach of paragraph (m) U.S. Competitiveness of this Patent Rights clause.

(e) Minimum Rights to Recipient and Protection of the Recipient Right to File

(1) The Recipient will retain a nonexclusive royalty-free license throughout the world in each subject invention to which the Government obtains title, except if the Recipient fails to disclose the invention within the times specified in (c), above. The Recipient's license extends to its domestic subsidiary and affiliates, if any, within the corporate structure of which the Recipient is a party and includes the right to grant sublicenses of the same scope to the extent the Recipient was legally obligated to do so at the time the agreement was awarded. The license is transferable only with the approval of the Federal agency except when transferred to the successor of that party of the Recipient's business to which the invention pertains.

(2) The Recipient's domestic license may be revoked or modified by the funding Federal agency to the extent necessary to achieve expeditious practical application of the subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions at 37 CFR part 404 and agency licensing regulations (if any). This license will not be revoked in that field of use or the geographical areas in which the Recipient has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at the discretion of the funding Federal agency to the extent the Recipient, its licensees, or the domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country.

(3) Before revocation or modification of the license, the funding Federal agency will furnish the Recipient a written notice of its intention to revoke or modify the license, and the Recipient will be allowed thirty days (or such other time as may be authorized by the funding Federal agency for good cause shown by the Recipient) after the notice to show cause why the license should not be revoked or modified. The Recipient has the right to appeal, in accordance with applicable regulations in 37 CFR part 404 and agency regulations (if any) concerning the licensing of Government-owned inventions, any decision concerning the revocation or modification of the license.

(f) Recipient Action to Protect the Government's Interest

(1) The Recipient agrees to execute or to have executed and promptly deliver to the Federal agency all instruments necessary to (i) establish or confirm the rights the Government has throughout the world in those subject inventions to which the Recipient elects to retain title, and (ii) convey title to the Federal agency when requested under paragraph (d) above and to enable the government to obtain patent protection throughout the world in that subject invention.

(2) The Recipient agrees to require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the Recipient each subject invention made under agreement in order that the Recipient can comply with the disclosure provisions of paragraph (c) of this clause, to assign to



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the Recipient the entire right, title and interest in and to each subject invention made under agreement, and to execute all papers necessary to file patent applications on subject inventions and to establish the government's rights in the subject inventions. This disclosure format should require, as a minimum, the information required by paragraph (c)(1) of this clause. The Recipient shall instruct such employees through employee agreements or other suitable educational programs on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to U.S. or foreign statutory bars.

(3) For each subject invention, the Recipient will, no less than 60 days prior to the expiration of the statutory deadline, notify the Federal agency of any decision: Not to continue the prosecution of a non-provisional patent application; not to pay a maintenance, annuity or renewal fee; not to defend in a reexamination or opposition proceeding on a patent, in any country; to request, be a party to, or take action in a trial proceeding before the Patent Trial and Appeals Board of the U.S. Patent and Trademark Office, including but not limited to post-grant review, review of a business method patent, inter partes review, and derivation proceeding; or to request, be a party to, or take action in a non-trial submission of art or information at the U.S. Patent and Trademark Office, including but not limited to a pre-issuance submission, a post-issuance submission, and supplemental examination.

(4) The Recipient agrees to include, within the specification of any United States patent applications and any patent issuing thereon covering a subject invention, the following statement, "This invention was made with government support under DE-SC0017752 awarded by U.S. Department of Energy. The government has certain rights in the invention."

(g) Subawards

(1) The Recipient will include this clause, suitably modified to identify the parties, in all subawards, regardless of tier, for experimental, developmental or research work to be performed by a domestic small business firm or nonprofit organization. The subrecipient will retain all rights provided for the Recipient in this clause, and the Recipient will not, as part of the consideration for awarding the subaward, obtain rights in the subrecipient's subject inventions.

(2) The Recipient will include in all other subawards, regardless of tier, for experimental developmental or research work the patent rights clause directed by the DOE Contracting Officer.

(h) Reporting on Utilization of Subject Inventions

The Recipient agrees to submit on request periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the Recipient or its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the Recipient, and such other data and information as the agency may reasonably specify. The Recipient also agrees to provide additional reports as may be requested by the agency in connection with any march-in proceeding undertaken by the agency in accordance with paragraph (j) of this clause. As required by 35 U.S.C. 202(c)(5), the agency agrees it will not disclose such information to persons outside the government without permission of the Recipient.

(i) Preference for United States Industry

Notwithstanding any other provision of this clause, the Recipient agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell any subject inventions in the United States unless such person agrees that any products embodying the subject invention or produced through the use of the subject invention



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will be manufactured substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by the Federal agency upon a showing by the Recipient or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

(j) March-in Rights

The Recipient agrees that with respect to any subject invention in which it has acquired title, the Federal agency has the right in accordance with the procedures in 37 CFR 401.6 and any supplemental regulations of the agency to require the Recipient, an assignee or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if the Recipient, assignee, or exclusive licensee refuses such a request the Federal agency has the right to grant such a license itself if the Federal agency determines that:

- (1) Such action is necessary because the Recipient or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use.
- (2) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the Recipient, assignee or their licensees;
- (3) Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the Recipient, assignee or licensees; or
- (4) Such action is necessary because the agreement required by paragraph (i) of this clause has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of such agreement.

(k) Special Provisions for Agreements with Nonprofit Organizations

If the Recipient is a nonprofit organization, it agrees that:

- (1) Rights to a subject invention in the United States may not be assigned without the approval of the Federal agency, except where such assignment is made to an organization which has as one of its primary functions the management of inventions, provided that such assignee will be subject to the same provisions as the Recipient;
- (2) The Recipient will share royalties collected on a subject invention with the inventor, including Federal employee co-inventors (when the agency deems it appropriate) when the subject invention is assigned in accordance with 35 U.S.C. 202(e) and 37 CFR 401.10;
- (3) The balance of any royalties or income earned by the Recipient with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions, will be utilized for the support of scientific research or education; and
- (4) It will make efforts that are reasonable under the circumstances to attract licensees of subject inventions that are small business firms and that it will give a preference to a small business firm when licensing a subject invention if the Recipient determines that the small business firm has a plan or proposal for marketing the invention which, if executed, is equally as likely to bring the invention to practical application as any plans or proposals from applicants that are not small business firms; provided, that the Recipient is also satisfied that



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the small business firm has the capability and resources to carry out its plan or proposal. The decision whether to give a preference in any specific case will be at the discretion of the Recipient. However, the Recipient agrees that the Federal agency may review the Recipient's licensing program and decisions regarding small business applicants, and the Recipient will negotiate changes to its licensing policies, procedures, or practices with the Federal agency when the Federal agency's review discloses that the Recipient could take reasonable steps to implement more effectively the requirements of this paragraph (k)(4). In accordance with 37 CFR 401.7, the Federal agency or the Recipient may request that the Secretary review the Recipient's licensing program and decisions regarding small business applicants.

(l) Communication

Unless otherwise directed by DOE Patent Counsel, all reports and notifications required by this clause shall be submitted in accordance with the instructions provided in the Federal Assistance Reporting Checklist (FARC) of this agreement.

(m) U.S. Competitiveness

The Recipient agrees that any products embodying any subject invention or produced through the use of any subject invention will be manufactured substantially in the United States unless the Recipient can show to the satisfaction of DOE that it is not commercially feasible. In the event DOE agrees to foreign manufacture, there will be a requirement that the Government's support of the technology be recognized in some appropriate manner, e.g., alternative binding commitments to provide an overall net benefit to the U.S. economy. The Recipient agrees that it will not license, assign or otherwise transfer any subject invention to any entity, at any tier, unless that entity agrees to these same requirements. In the event that the Recipient or other such entity receiving rights in the Subject Invention undergoes a change in ownership amounting to a controlling interest, the Recipient or other such entity receiving rights shall ensure continual compliance with the requirements of this paragraph (m) and shall inform DOE, in writing, of the change in ownership within six months of the change. The Recipient and any successor assignee will convey to DOE, upon written request from DOE, title to any subject invention, upon a breach of this paragraph (m). The Recipient will include this paragraph (m) in all subawards/contracts, regardless of tier, for experimental, developmental or research work.

(n) The requirements, rights and administration of paragraph (m) are further clarified as follows:

1. **Waivers.** The Recipient (or any entity subject to paragraph (m)) may request a waiver or modification of paragraph (m). Such waivers or modifications may be granted when DOE determines that (1) the Recipient (or any entity subject to paragraph (m)) has demonstrated, with quantifiable data, that manufacturing in the United States is not commercially feasible and (2) a waiver or modification would best serve the interests of the United States and the general public.
2. **Final determination of breach of paragraph (m).** If DOE determines the Recipient is in breach of paragraph (m), the Department may issue a final written determination of such breach. If such determination includes a demand for title to the subject inventions under the award, the demand for title will cause an immediate conveyance and assignment of all rights to all subject inventions under the award to the United States Government, including all pending U.S. and foreign patent applications and all U.S. and foreign patents that cover any subject invention, without compensation. Any such



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final determination shall be signed by the cognizant DOE Contracting Officer with the concurrence of the Assistant General Counsel for Technology Transfer & Intellectual Property. Advanced notice will be provided for comment to the Recipient before any final written determination by DOE is issued.

3. Pursuant to Recipient's agreement in paragraph (m) to not license, assign or otherwise transfer rights to subject inventions at any tier unless the entity agrees to paragraph (m): any such license, assignment, or other transfer of right to any subject invention developed under the award shall contain paragraph (m) suitably modified to properly identify the parties. If a licensee, assignee, or other transferee of rights to any subject invention is finally determined by DOE in writing to be in breach of paragraph (m), the applicable license, assignment or other transfer shall be deemed null and void. Advanced notice will be provided for comment to the non-complying party before any final written determination by DOE is made.
4. For clarity, if the forfeiture of title to any subject invention is due to a breach of paragraph (m), the Recipient shall not be entitled to any compensation, or to a license to the subject invention including the reserved license in section (e)(1), unless DOE grants a license through a separately agreed upon licensing agreement.
5. Authority. The requirements and administration of paragraph (m) is in accordance with the Determination of Exceptional Circumstances (DEC) under the Bayh-Dole Act to Further Promote Domestic Manufacture of DOE Science and Energy Technologies executed by DOE on June 7, 2021. A copy of the DEC is available at <https://www.energy.gov/gc/determination-exceptional-circumstances-decs>. By accepting or acknowledging the award, the Recipient is also acknowledging that it has received a copy of the DEC through the foregoing link. As set forth in 37 CFR 401.4, any nonprofit organization or small business firm as defined by 35 U.S.C. 201 affected by any DEC has the right to appeal the imposition of the DEC within thirty (30) working days from the Recipient's acceptance or acknowledgement of this award.



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Data Management Plan

The data management plan is attached to this intellectual property clause set or is otherwise included in the award or application documentation. The Data Management Plan explains how data generated in the course of the work performed under this agreement will be shared or preserved or, when justified, explains why data sharing or preservation is not possible or scientifically appropriate. In the event of a conflict between this Data Rights clause and the Data Management Plan, the Data Rights clause takes precedence.

ASSISTANCE AGREEMENT

1. Award No. DE-SC0022198		2. Modification No. 0001	3. Effective Date 08/15/2022	4. CFDA No. 81.049	
5. Awarded To UNIVERSITY OF CALIFORNIA, SANTA BARBARA Attn: CORA DIAZ OFFICE OF RESEARCH 3227 CHEADLE HALL SANTA BARBARA CA 931062050		6. Sponsoring Office Office of Science SC-1 U.S. Department of Energy 1000 Independence Avenue, S.W. Washington DC 20585		7. Period of Performance 08/15/2021 through 08/14/2023	
8. Type of Agreement <input checked="" type="checkbox"/> Grant <input type="checkbox"/> Cooperative Agreement <input type="checkbox"/> Other	9. Authority Public Law 95-91, U.S. Department of Energy Organization Act		10. Purchase Request or Funding Document No. 22SC503763		
11. Remittance Address UNIVERSITY OF CALIFORNIA, SANTA BARBARA Attn: CORA DIAZ SAASB BUILDING ROOM 1212 Cashier's Office SANTA BARBARA CA 931062003		12. Total Amount Govt. Share: \$4,440,000.00 Cost Share : \$0.00 Total : \$4,440,000.00	13. Funds Obligated This action: \$1,110,000.00 Total : \$2,220,000.00		
14. Principal Investigator	15. Program Manager Matthias J. Graf Phone: 301-903-0874		16. Administrator U.S. Department of Energy Office of Science Consolidated Service Center Office of Grants & Coop Agreements 9800 South Cass Avenue Lemont, IL 60439		
17. Submit Payment Requests To		18. Paying Office Payment - Direct Payment from U.S. Dept of Treasury		19. Submit Reports To See Federal Assistance Reporting Checklist and Instructions	
20. Accounting and Appropriation Data See Schedule					
21. Research Title and/or Description of Project Real-time dynamics of driven correlated electrons in quantum materials					
For the Recipient			For the United States of America		
22. Signature of Person Authorized to Sign			25. Signature of Grants/Agreements Officer Signature on File		
23. Name and Title		24. Date Signed	26. Name of Officer Warren Riley		27. Date Signed

CONTINUATION SHEETREFERENCE NO. OF DOCUMENT BEING CONTINUED
DE-SC0022198/0001PAGE OF
2 | 3NAME OF OFFEROR OR CONTRACTOR
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>DUNS Number: 094878394 UEI: G9QBQDH39DF4 SCHEDULE PURPOSE OF MODIFICATION:</p> <p>This continuation award fully funds the budget period commencing on the Effective Date specified in Block No. 3 and continuing through the Period of Performance end date specified in Block No. 7.</p> <p>The Federal Assistance Reporting Checklist and Instructions previously incorporated into this award is replaced with The Federal Assistance Reporting Checklist and Instructions attached hereto.</p> <p>All other terms and conditions remain unchanged.</p> <p>ACCOUNTING AND APPROPRIATION DATA (Block 20 Continued): N/A</p> <p>CONTACT INFORMATION:</p> <p>Recipient Business Officer:</p> <p>Kyle Hekhuis 805-893-3890 proposals@research.ucsb.edu See Address in Block 5 of Assistance Agreement</p> <p>Recipient Principal Investigator (Block 14 Continued):</p> <p>Vojtech Vlcek 805-893-8906</p> <p>DOE Program Manager (Block 15 Continued):</p> <p>Matthias Graf Matthias.Graf@science.doe.gov See Address in Block 6 of Assistance Agreement</p> <p>DOE Assistance Agreement Administrator:</p> <p>Nathanael Heinz 630-252-2332 Nathanael.Heinz@science.doe.gov See Address in Block 16 of Assistance Agreement</p> <p>Continued ...</p>				

CONTINUATION SHEETREFERENCE NO. OF DOCUMENT BEING CONTINUED
DE-SC0022198/0001PAGE OF
3 | 3NAME OF OFFEROR OR CONTRACTOR
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	THE TEXT BELOW IS FOR DOE INTERNAL USE ONLY: ASAP: YES Extent Competed: COMPETED Davis-Bacon Act: NO PI: Vlcek, Vojtech				

**U.S. Department of Energy
FEDERAL ASSISTANCE REPORTING CHECKLIST
AND INSTRUCTIONS**

<p>1. Identification Number: DE-SC0022198</p>	<p>2. Program/Project Title: Real-time dynamics of driven correlated electrons in quantum materials</p>															
<p>3. Recipient: UNIVERSITY OF CALIFORNIA, SANTA BARBARA</p>																
<p>4. Reporting Requirements:</p> <p>A. <u>MANAGEMENT REPORTING</u></p> <p><input checked="" type="checkbox"/> Research Performance Progress Report (RPPR) (RD&D Projects)</p> <p><input type="checkbox"/> Progress Report (Non-RD&D Projects)</p> <p><input checked="" type="checkbox"/> Special Status Report</p> <p>B. <u>SCIENTIFIC/TECHNICAL REPORTING</u></p> <p>(Dissemination of results is required for RD&D projects. Reports & other S&T publications/products must be submitted using the appropriate DOE Announcement Notice (AN) located at: https://www.osti.gov/elink)</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Product</th> <th style="text-align: left; border-bottom: 1px solid black;">Announcement Notice (AN)</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/> Scientific & Technical Reporting Product</td> <td></td> </tr> <tr> <td style="padding-left: 20px;">A. Journal Article-Accepted Manuscript</td> <td>DOE AN 241.3</td> </tr> <tr> <td style="padding-left: 20px;">B. Scientific/Technical Conference Paper/Presentation or Proceedings</td> <td>DOE AN 241.3</td> </tr> <tr> <td style="padding-left: 20px;">C. Scientific/Technical Software & Manual</td> <td>DOE AN 241.4</td> </tr> <tr> <td style="padding-left: 20px;">D. Other STI (e.g., dissertation/thesis, see instructions)</td> <td>DOE AN 241.3</td> </tr> <tr> <td><input checked="" type="checkbox"/> Final Scientific/Technical Report</td> <td></td> </tr> </tbody> </table> <p>C. <u>FINANCIAL REPORTING</u></p> <p><input checked="" type="checkbox"/> SF-425 Federal Financial Report</p> <p>D. <u>CLOSEOUT REPORTING</u></p> <p><input checked="" type="checkbox"/> Patent Certification</p> <p><input checked="" type="checkbox"/> SF-428 & 428B Final Property Report</p> <p><input type="checkbox"/> Other (see special instructions)</p> <p>E. <u>OTHER REPORTING</u></p> <p><input checked="" type="checkbox"/> Annual Indirect Cost Proposal</p> <p><input type="checkbox"/> Audit of For-Profit Recipients</p> <p><input checked="" type="checkbox"/> SF-428 Tangible Personal Property Report Forms Family</p> <p><input checked="" type="checkbox"/> Other (see special instructions)</p> <p style="padding-left: 20px;"><input checked="" type="checkbox"/> Subject Invention Reporting and Patent Reporting</p>	Product	Announcement Notice (AN)	<input checked="" type="checkbox"/> Scientific & Technical Reporting Product		A. Journal Article-Accepted Manuscript	DOE AN 241.3	B. Scientific/Technical Conference Paper/Presentation or Proceedings	DOE AN 241.3	C. Scientific/Technical Software & Manual	DOE AN 241.4	D. Other STI (e.g., dissertation/thesis, see instructions)	DOE AN 241.3	<input checked="" type="checkbox"/> Final Scientific/Technical Report		<p>Frequency</p>	<p>Addressees</p>
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<input checked="" type="checkbox"/> Final Scientific/Technical Report																
	<p>O; See Note 5.a.</p> <p>--</p> <p>A</p>	<p>https://pamspublic.science.energy.gov/webpamsepsexternal/ogin.aspx</p> <p>https://pamspublic.science.energy.gov/webpamsepsexternal/ogin.aspx</p> <p>https://www.fedconnect.net/fedconnect/default.aspx and an E-mail to the DOE Program Manager listed in Block 15 of the Assistance Agreement. The E-mail address is listed on the Assistance Agreement Continuation Sheet.</p>														
	<p>O; See Note 5.b.</p> <p>O</p> <p>O</p>	<p>http://www.osti.gov/elink-2413</p> <p>http://www.osti.gov/elink-2413</p> <p>http://www.osti.gov/estsc/241-4pre.jsp</p> <p>http://www.osti.gov/elink-2413</p>														
	<p>F; See Note 5.c.</p>	<p>http://www.osti.gov/elink-2413</p>														
	<p>Q, F</p> <p>F; See Note 5.d.</p>	<p>E-mail to FFR@science.doe.gov https://www.fedconnect.net/fedconnect/default.aspx</p>														
	<p>O; See Note 5.e.</p> <p>F, See Note 5.e.</p> <p>F, See Note 5.e.</p>	<p>https://www.fedconnect.net/fedconnect/default.aspx</p> <p>https://www.fedconnect.net/fedconnect/default.aspx</p> <p>https://www.fedconnect.net/fedconnect/default.aspx</p>														
	<p>Y180</p>	<p>https://www.fedconnect.net/fedconnect/default.aspx (or Cognizant Federal Agency)</p> <p>https://www.fedconnect.net/fedconnect/default.aspx & send to CFO at: DOE-Audit-Submission@hq.doe.gov</p>														
	<p>O; See Note 5.f.</p>	<p>https://www.fedconnect.net/fedconnect/default.aspx</p>														
	<p>O; See Note 5.g.</p>	<p>https://www.iEdison.gov</p>														
<p>FREQUENCY CODES AND DUE DATES:</p> <p>A – Within 5 calendar days after events or as specified.</p> <p>Y – Yearly; within 90 days after the end of the reporting period.</p> <p>Q – Quarterly; within 30 days after end of the reporting period.</p> <p>O – Other; See special instructions for further details.</p> <p>F – Final; within 90 calendar days after expiration or termination of the award.</p> <p>Y180 – Yearly; within 180 days after the end of the recipient’s fiscal year.</p> <p>S – Semiannually; within 30 days after end of reporting period.</p>																
<p>FOR USE WITH 10 CFR PART 605 AWARDS (EXCEPT CONFERENCES)</p>		<p>JUNE 2022</p>														

5. Special Instructions:

Notes:

- a. Progress Reports and Renewal Applications: Progress Reports must be submitted 90 days prior to the anticipated continuation funding date. Renewal applications must be submitted no later than six months prior to the scheduled expiration of the project period and must include a separate section that describes the results of work accomplished through the date of the renewal application (see 10 CFR 605.9). Renewal applications shall be submitted electronically through Grants.gov at <http://www.grants.gov/>.
- b. Scientific & Technical Reporting Products: See Section B., SCIENTIFIC/TECHNICAL REPORTING, of the Federal Assistance Reporting Instructions, for submission instructions specific to each type of required scientific/technical deliverable.
- c. Final Scientific/Technical Report: For research awards subject to the Federal-Wide Research Terms and Conditions and DOE Agency-Specific Requirements, the Final/Scientific Report must be submitted no later than 120 calendar days after the end date of the period of performance.
- d. Federal Financial Report: Quarterly and Final Federal Financial Reports (FFRs) must be submitted to the U.S. Department of Energy, Office of Science-Consolidated Service Center-Chicago (CSC-Chicago), Office of Financial Services, at the E-mail address listed and should only include financial information for awards issued by the CSC-Chicago. Final FFRs must also be submitted through Fedconnect. The FFR and instructions may be found at the web address included in Section C., Financial Reporting, of the attached instructions. After submitting a Final FFR for an individual award, do not continue to report the award on subsequent FFR submissions unless a correction is required. For research awards subject to the Federal-Wide Research Terms and Conditions and DOE Agency-Specific Requirements, the Final FFR must be submitted no later than 120 calendar days after the end date of the period of performance.
- e. Closeout Reporting: For research awards subject to the Federal-Wide Research Terms and Conditions and DOE Agency-Specific Requirements, closeout reports, such as the Patent Certification and Final Property Report, must be submitted no later than 120 calendar days after the end date of the period of performance.
- f. SF-428: See Section E. OTHER REPORTING, SF-428 Tangible Personal Property Report Forms Family, of the Federal Assistance Reporting Instructions, for specific guidance and submission schedules.
- g. Subject Invention Reporting and Patent Reporting: All subject inventions must be reported through the Interagency Edison (iEdison) system at www.iEdison.gov within two (2) months after the inventor discloses it in writing to Recipient personnel responsible for the administration of patent matters or six (6) months after conception or first actual reduction to practice, depending on the terms of the award. The Recipient must promptly report through iEdison, the acceptance of any manuscript describing a subject invention for publication or of any on sale or public use planned for the invention. Additionally, all invention reporting, including, but not limited to, decisions whether to elect title to subject inventions, reporting of all patent applications filed on subject inventions, confirmatory license submissions, etc. must be reported through iEdison. Failure to comply with the subject invention reporting requirements may result in a loss of rights, including, but not limited to, forfeiture of patent rights. For assistance with iEdison, please contact the iEdison Help Desk at (301) 435-1986 or email edison@od.nih.gov. All questions regarding the patent and data provisions should be directed to Intellectual Property Law Division, Chicago Office, at (630) 252-2171 or Chicago-IP@science.doe.gov.

Federal Assistance Reporting Instructions

A. MANAGEMENT REPORTING

For awards involving RD&D a Research Performance Progress Report is required to be submitted. For all other awards a Progress Report is required to be submitted.

Either the Research Performance Progress Report (RPPR) or the Progress Report must be checked, but not both.

Research Performance Progress Report (RPPR) (RD&D Projects)

See the attachment entitled “Research Performance Progress Report” for instructions on what the Recipient is to include in the RPPR.

Progress Report (Non-RD&D Projects)

The Recipient must provide a concise narrative assessment of the status of work and include the following information and any other information identified under Special Instructions on the Federal Assistance Reporting Checklist:

1. The DOE award and report information:
 - a. The DOE Award Number (as it appears on the award face page)
 - b. Recipient Name (as it appears on the award face page)
 - c. Project Title
 - d. PD/PI Name, Title and Contact Information (e-mail address and phone number)
 - e. Name of Submitting Official, Title, and Contact Information (e-mail address and phone number), if other than PD/PI
 - f. Project Period (Start Date, End Date)
 - g. Report Submission Date
 - h. Reporting Period Start and End Date
2. A written comparison of the actual project accomplishments with the project goals and objectives established for the reporting period; if goals and/or objectives for the reporting period were not met, a detailed description of the variance shall be provided.
3. A discussion of what was accomplished under these goals and objectives established for this reporting period, including major activities, significant results, major findings or conclusions, key outcomes or other achievements. This section should not contain any proprietary data or other information not subject to public release. If such information is important to reporting progress, do not include the information, but include a note in the report advising the reader to contact the Principal Investigator or the Project Director for further information.
4. Cost Status. A comparison of the approved budget by budget period and the actual costs incurred during the reporting period shall be provided. If cost sharing is required, the cost breakdown shall show the DOE share, recipient share, and total costs.

5. Schedule Status. List milestones, anticipated completion dates and actual completion dates. If you submitted a project management plan with your application, you must use this plan to report schedule and budget variances. You may use your own project management system to provide this information.
6. Describe any changes during the reporting period in project approach and the reasons for these changes. Remember, significant changes to the project objectives and scope require prior approval by the Contracting Officer.
7. Describe any actual or anticipated problems or delays and any actions taken or planned to resolve them.
8. Describe any absence or changes of key personnel or changes in consortium/teaming arrangement during the reporting period.
9. List and describe any product produced or technology transfer activities accomplished during this reporting period, such as:
 - a. Publications (list journal name, volume, issue); conference papers; or other public releases of results. Attach or send copies of public releases to the DOE Program Manager identified in Block 15 of the Assistance Agreement Cover Page.
 - b. Web site or other Internet sites (list the URL) that reflect the results of this project.
 - c. Networks or collaborations fostered.
 - d. Technologies/Techniques (Identify and Describe).
 - e. Inventions/Patent Applications (Identify and Describe with date of application)
 - f. Other products, such as data or databases, physical collections, audio or video, software or NetWare, models, educational aid or curricula, instruments or equipment (Identify and Describe).

Special Status Report

The recipient must report the following events by e-mail as soon as possible after they occur:

1. Developments that have a significant favorable impact on the project.
2. Problems, delays, or adverse conditions which materially impair the recipient's ability to meet the objectives of the award or which may require DOE to respond to questions relating to such events from the public. The recipient must report any of the following incidents and include the anticipated impact and remedial action to be taken to correct or resolve the problem/condition:
 - a. Any single fatality or injuries requiring hospitalization of five or more individuals.
 - b. Any significant environmental permit violation.
 - c. Any verbal or written Notice of Violation of any Environmental, Safety, and Health statutes.
 - d. Any incident which causes a significant process or hazard control system failure.

- e. Any event which is anticipated to cause a significant schedule slippage or cost increase.
- f. Any damage to Government-owned equipment in excess of \$50,000.
- g. Any other incident that has the potential for high visibility in the media.

B. SCIENTIFIC/TECHNICAL REPORTING

The dissemination of scientific and technical information (STI) ensures public access to the results of federally funded research. STI refers to information products in any medium or format used to convey results, findings, or technical innovations from research and development or other scientific and technological work that are prepared with the intention of being preserved and disseminated in the broadest sense applicable (i.e., to the public or, in the case of controlled unclassified information or classified information, disseminated among authorized individuals). Access to and archival of DOE-funded STI are managed by the DOE Office of Scientific and Technical Information (OSTI). For information about OSTI see <http://www.osti.gov>.

For more information on STI submittals, see <https://www.osti.gov/submit-sti>.

By properly notifying DOE OSTI about the published results, the information will be made publicly accessible and discoverable through DOE web-based products.

NOTE: SCIENTIFIC/TECHNICAL PRODUCTS INTENDED FOR PUBLIC RELEASE MUST NOT CONTAIN PROTECTED PERSONALLY IDENTIFIABLE INFORMATION (PII).

PII is defined as any information about an individual which can be used to distinguish or trace an individual's identity. Some information that is considered to be PII is available in *public* sources such as telephone books, public websites, university listings, etc. This type of information is considered to be Public PII and includes, for example, first and last name, address, work telephone number, e-mail address, home telephone number, and general educational credentials. In contrast, *Protected* PII is defined as an individual's first name or first initial and last name in combination with any one or more of the following types of information: social security number, passport number, credit card numbers, clearances, bank numbers, biometrics, date and place of birth, mother's maiden name, criminal, medical and financial records, educational transcripts, etc., which could be mis-used if made publicly available.

1. Scientific and Technical Reporting Products

a. Journal Article-Accepted Manuscript

Recipients are encouraged to publish their work in scholarly journals. When/if a recipient has an article accepted for publication in a peer-reviewed journal they are required to announce the publication to OSTI as detailed below. This Reporting Requirement will be denoted with the Frequency "O – Other" on the Checklist.

Public access to peer-reviewed scholarly publications can be achieved by following these instructions. If the Recipient has a journal article accepted for publication which contains information/data produced under the award, then the Recipient must submit an AN 241.3 for the author's full-text version of the accepted manuscript, as described below, at the time the article meets the status of being "accepted" for publication. The

Federal Government's right to use the data produced under a Federal award is established in 2 CFR 200.315(d), U.S. Government's retained license to published results of federally funded research.

Content. The Recipient is to announce to DOE the final peer-reviewed accepted manuscript (AM), i.e., the version of the journal article content that has been peer reviewed and accepted for publication in a journal, by providing a persistent link to the accepted manuscript on the recipient's publicly accessible institutional repository or submitting the full text (see Electronic Submission Process below). The Recipient should NOT submit the journal's published version of the article, i.e., the Recipient should NOT submit a copyrighted reprint. The Recipient should not submit the content of peer reviews or a commitment to publish. The Recipient should provide only the accepted manuscript content intended to be the published article.

DOE will make no additional review of the content of an AM because the AM is a version of the journal article with the content to be published (i.e., publicly released) by the journal publisher. The Recipient is responsible for ensuring the suitability of the content for public release. The terms and conditions of award provide that PII, proprietary, export control or classified information shall be protected. DOE may choose to defer providing public access until an administrative interval period has passed.

The Recipient must self-certify at the time of submission to DOE via E-Link that the content is appropriate and that it is not a copyrighted reprint, i.e., the final version of the published article. Recipients are reminded that the article is to include an acknowledgement of Federal support and a disclaimer.

Electronic Submission Process. The Journal Article-Accepted Manuscript must be announced via the DOE Energy Link System (E-Link) by submitting a completed DOE Announcement Notice (AN) 241.3 (<https://www.osti.gov/mlink-2413>).

Within the AN 241.3, provide relevant journal information (article title, journal name, volume, issue, and any other pertinent publication information). Also provide a persistent link to the repository location of the accepted manuscript. An example of an acceptable persistent link is a URL to the specific location of the Journal Article-Accepted Manuscript hosted on a public, openly accessible university research publications website. If a persistent link is not available or if the website has access restrictions (preventing public access), then the Recipient must upload the full-text of the Accepted Manuscript using the AN 241.3 and E-Link instructions.

Full-text of accepted manuscripts must be in Adobe Portable Document Format (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Please refer to <https://www.osti.gov/stip/about/faqs/what-type-of-pdf-for-submission> for PDF document creation.

b. **Scientific/Technical Conference Paper/Presentation or Proceedings**

Recipients are encouraged to announce Scientific and Technical Conference Papers/Presentations if they are the primary means by which certain research results are disseminated or if they contain research results not already announced to DOE by the Recipient in technical reports, accepted journal articles, or other STI. This Reporting Requirement will be denoted with the Frequency "O – Other" on the

Checklist. Instructions for how to announce such STI can be found below. In cases where the Recipient is required to create and submit a Conference Proceedings, the Frequency will be “F – Final.”

Content. The content should include: (1) Name of conference; (2) Location of conference; (3) Date of conference; and (4) Conference sponsor. Also include an acknowledgement of Federal support and a disclaimer.

Electronic Submission Process. Scientific/technical conference papers/presentations or proceedings must be submitted via the DOE Energy Link System (E-Link) with a completed DOE Announcement Notice (AN) 241.3 (<https://www.osti.gov/elink-2413>).

DOE will not review conference papers or presentations prior to making publicly available via OSTI since they were already presented in a public setting during a conference. The Recipient is responsible for ensuring the suitability of the content for public release. The terms and conditions of award provide that PII, proprietary, export control or classified information shall be protected. The Recipient must self-certify at the time of submission to DOE via E-Link that the content is appropriate for and has been publicly released.

Scientific/technical conference papers or proceedings that are textual documents must be submitted in Adobe Portable Document Format (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Please refer to <https://www.osti.gov/stip/about/faqs/what-type-of-pdf-for-submission> for PDF document creation. Audiovisual formats, such as PowerPoint (PPT) or video presentations, may be submitted as a Microsoft PPT file or audiovisual file by selecting the appropriate format on the AN 241.3 for the file to be uploaded or, in the case of videos posted on a publicly available website, by providing a link to the specific video. Format options and other instructions can be found at <http://www.osti.gov/stip/audiovisualsti>.

c. Scientific/Technical Software & Manual

Content. When a Recipient submits software to OSTI for dissemination, the following must be delivered: source code, the executable object code and the minimum support documentation needed by a competent user to understand and use the software and to be able to modify the software in subsequent development efforts, unless otherwise specified in the award.

Submission Process. The software submission must be accompanied by a completed DOE Announcement Notice (AN) 241.4 “Announcement of U.S. Department of Energy Computer Software.” The announcement notice and instructions are available on E-Link at <http://www.osti.gov/estsc/241-4.jsp>. The AN 241.4 may be filled online and submitted electronically, with a printed copy or note accompanying the shipped software package.

Software (including user guide or manual) must be submitted on computer disk (CD) shipped via regular mail to:

Energy Science and Technology Software Center
P.O. Box 1020
Oak Ridge, TN 37831

d. Other STI

Recipients are encouraged to announce other forms of STI especially if they are the primary means by which certain research results are disseminated or if they contain research results not already announced to DOE by the Recipient in technical reports, accepted journal articles, or other STI. This Reporting Requirement will be denoted with the Frequency “O – Other” on the Checklist.

Other types of STI produced which may be used for public dissemination of project results include: dissertation/thesis, patent, book, or other similar products. These types of STI may also be announced using DOE AN 241.3 by following instructions on the E-Link website (<http://www.osti.gov/elink-2413>).

2. Final Scientific/Technical Report

For R&D type awards where a Final Scientific/Technical Report is required, recipients are required to create and submit a final technical report. This Reporting Requirement will be denoted with the Frequency “F – Final” on the Federal Assistance Reporting Checklist.

The scientific/technical report is intended to increase the diffusion of knowledge gained by DOE-funded research, and all requirements shall be interpreted in that light.

Content. Research findings and other significant STI resulting from the DOE-sponsored R&D project shall be included in the final scientific/technical report, subject to the following provisions:

1. The scientific/technical report is to cover the entire project period. For Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards, a final scientific/technical report must be submitted after the completion of each phase, e.g., Phase I, Phase II, and sequential Phase II, as described in the Special Instructions.
2. STI that is publicly accessible need not be duplicated in the report if a citation with a link to where the information may be found is included in the report. For example, articles found in PAGES (i.e., DOE’s Public Access Gateway for Energy and Science, <http://www.osti.gov/pages/>) are accessible to the public.
3. Provide identifying information: the DOE award number; sponsoring program office; name of recipient; project title; name of project director/principal investigator; and consortium/teaming members.
4. Include an acknowledgment of Federal support and a disclaimer, which must appear in the publication of any material as noted in the terms and conditions.
5. Include any limitations on public release of the report, if applicable. If the document being submitted contains patentable material or protected data (i.e., data first produced in the performance of the award that is protected from public release for a period of time by terms of the award agreement, e.g., SBIR protected data), then (1) prominently display on the cover of the report any authorized distribution limitation notices, such as patentable material or protected data (e.g., SBIR protected data) and (2) clearly identify patentable or protected data on each page of the report. Reports delivered without such notices may be deemed to have been furnished with unlimited rights, and the Government assumes no liability for the disclosure, use or reproduction of such reports. Any restrictive markings must also be noted in the distribution limitation section of the Announcement Notice (AN)

241.3 (see Electronic Submission Process, below). No protected PII should be included (see PII definition).

6. Provide an abstract or executive summary, which should be a minimum of one paragraph and written in terms understandable by an educated layperson. (Refer to <https://www.osti.gov/stip/about/statutory-authorities> for ANSI/NISO guidance as needed.) The abstract included in an application may serve as a model for this.
7. Summarize project activities for the entire period of funding, including original hypotheses, approaches used, and findings. Include, if applicable, facts, figures, analyses, and assumptions used during the life of the project to support the results in a manner that conveys to the scientific community the STI created during the project. To minimize duplication, the report may reference STI, including journal articles, that is publicly accessible. See also #2.
8. For guidance offered by the National Information Standards Organization on typical attributes and content of a technical report, if needed, refer to ANSI/NISO Z39.18-2005 (R2010), Scientific and Technical Reports – Preparation, Presentation, and Preservation (see <https://www.osti.gov/stip/about/statutory-authorities>).

Electronic Submission Process. The final scientific/technical report must be submitted via the DOE Energy Link System (E-Link) with a completed electronic version of DOE Announcement Notice (AN) 241.3, “U.S. Department of Energy (DOE), Announcement of Scientific and Technical Information (STI).” The Recipient can complete, upload, and submit the DOE AN 241.3 online via E-Link (<https://www.osti.gov/elink-2413>).

The Recipient must mark the appropriate block in the “Intellectual Property/Distribution Limitations” Section of the DOE AN 241.3. Reports that are electronically uploaded must not contain any limited rights data (proprietary data), classified information, protected PII, information subject to export control classification, or other information not subject to release. During the upload process, the Recipient must self-certify that no content of this nature is being submitted. For assistance with reports containing such content, contact the Contracting Officer.

Text documents must be submitted in Adobe Portable Document Format (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Please refer to <https://www.osti.gov/stip/about/statutory-authorities> for PDF document creation.

C. FINANCIAL REPORTING

The Recipient must complete the SF-425 as identified on the Reporting Checklist in accordance with the report instructions. A fillable version of the form is available at <https://www.grants.gov/web/grants/forms/post-award-reporting-forms.html>

D. CLOSEOUT REPORTS

Final Invention and Patent Report

The Recipient must provide a DOE Form 2050.11, “PATENT CERTIFICATION.” This form is available at **Error! Hyperlink reference not valid.** <http://energy.gov/management/office->

[management/operational-management/financial-assistance/financial-assistance-forms](#) under Reporting Forms.

Final Property Report

See Instructions under **SF-428 Tangible Personal Property Report Forms Family** below.

E. OTHER REPORTING

Annual Indirect Cost Proposal and Reconciliation

Requirement. In accordance with the applicable cost principles, the recipient must submit an annual indirect cost proposal, reconciled to its financial statements, within six months after the close of the recipient's fiscal year, unless the award is based on a predetermined or fixed indirect rate(s), or a fixed amount for indirect or facilities and administration (F&A) costs. The format and content of the indirect cost proposal should follow the Defense Contract Audit Agency's (DCAA) ICE Model in order to be considered an adequate proposal. DCAA's ICE Model can be found on the DCAA website at: <https://www.dcaa.mil/Checklists-Tools/ICE-Model/>.

Cognizant Agency. The Recipient must submit its annual indirect cost proposal directly to the cognizant agency for negotiating and approving its indirect costs. If the DOE awarding office is the cognizant agency, the Recipient must submit their annual indirect cost proposal to <https://www.fedconnect.net/fedconnect/default.aspx>

Audit of For-Profit Recipients

As required by 2 CFR parts 910.500 through 910.521, a For-Profit entity which expends \$750,000 or more during their fiscal year in DOE awards must have a compliance audit conducted for that year.

Submission: The compliance audit report(s) must be submitted to DOE within the earlier of 30 days after receipt of the auditor's report(s) or nine months after the end of the audit period (Recipient's fiscal year-end).. The compliance audit report must be submitted, along with audited financial statements (if applicable), to the appropriate DOE Contracting Officer at <https://www.fedconnect.net/fedconnect/default.aspx> as well as to the DOE Office of the Chief Financial Officer (CFO) at DOE-Audit-Submission@hq.doe.gov .

SF-428 Tangible Personal Property Report Forms Family

Requirement. The SF-428 is a forms family consisting of 5 forms: the SF-428, SF-428-A, SF-428-B, SF-428-C and SF-428S. Fillable versions of the SF-428 forms are **temporarily** available at https://www.reginfo.gov/public/do/PRAViewLC?ref_nbr=201002-3090-001&icID=192059. The SF-428 is the cover page and the submitter attaches the appropriate form or forms as listed on the SF-428.

- The SF-428A is the Annual report, due Oct 30th of each calendar year.
- The SF-428B is the Final Award Closeout Report, due 90 calendar days after completion or termination of the award.
- The SF-428C is the Disposition Report/Request.

- The SF-428S is the supplemental form for the SF-428-A, SF-428-B, and SF-428-C.

If at any time during the award the Recipient is provided Government-furnished property or acquires property with project funds and the award specifies that the property vests in the Federal Government (i.e. federally owned property), the Recipient must submit an annual inventory of this property to the DOE Administrator using the SF-428 and SF-428-A forms at the address on page 1 of this checklist **no later than October 30th of each calendar year**, to cover an annual reporting period ending on the preceding September 30th. The SF-428 and SF-428-B reports are required 90 calendar days after completion or termination of award to complete the closeout process.

Content of Inventory. As required on the SF-428-A and SF-428-S forms, the inventory must include a description of the property, tag number, acquisition date, and acquisition cost, if purchased with project funds. The location of property should be listed under the Comments section. The report must list all federally owned property, including property located at subcontractor's facilities or other locations.

RESEARCH PERFORMANCE PROGRESS REPORT

Standard Cover Page Data Elements and Reporting Categories

The standard cover page data elements shown below, as well as mandatory and optional components comprise the complete research performance progress report format. Each category in the RPPR is a separate reporting component. Each component is marked to indicate if it is optional or mandatory. Mandatory components must be addressed in each report, optional are at your discretion. For Optional components, if you have nothing significant to report during the reporting period on a question or item, state "Nothing to Report," if there are reportable items, please submit according to the instructions for each section. Onscreen instructions for completing the report are provided in the Portfolio Analysis and Management System (PAMS). Major sections of the progress report, marked here with Roman Numerals, are separate pages inside the PAMS system. Each section must be marked as complete in PAMS before the report can be submitted to DOE. For some sections, information provided in this progress report will be used to prepopulate the next progress report required for the award. Information from the Products section will prepopulate the Renewal Proposal Products section of future renewal proposals.

I. COVER PAGE DATA ELEMENTS: All fields except Recipient Award ID Number are prepopulated by PAMS

- a. Recipient Award Identification Number (an optional identifying number issued by the recipient and used for internal processing or reporting)
- b. Federal Agency and Organization Element to Which Report is Submitted (prepopulated)
- c. Federal Grant or Other Identifying Number Assigned by Agency (prepopulated)
- d. Project Title (prepopulated)
- e. PD/PI Name, Title and Contact Information (e-mail address and phone number) (prepopulated)
- f. Name of Submitting Official, Title, and Contact Information (e-mail address and phone number), if other than PD/PI (prepopulated)
- g. Submission Date (prepopulated)
- h. DUNS Number (prepopulated)
- i. Recipient Organization (Name and Address) (prepopulated)
- j. Project/Grant Period (Start Date, End Date) (prepopulated)
- k. Reporting Period End Date (prepopulated)
- l. Report Term or Frequency (annual, semi-annual, quarterly, final, other) (prepopulated)

II. ACCOMPLISHMENTS: Mandatory

What was done? What was learned?

The information provided in this section allows the agency to assess whether satisfactory progress has been made during the reporting period. The PI is reminded that the grantee is required to obtain prior written approval from the Contracting Officer whenever there are significant changes in the project or its direction. Requests for prior written approval must be submitted to the Contracting Officer.

a. What are the major goals and objectives of this project?

List the major goals of the project as stated in the approved application or as approved by the agency. Describe the proposed technical approach to obtain those goals. If the application lists milestones/target dates for important activities or phases of the project, identify these dates and show actual completion dates or the percentage of completion. Generally, the goals will not change from one reporting period to the next. However, if the awarding agency approved changes to the goals during the reporting period, list the revised goals and objectives. Also explain any significant changes in approach or methods from the agency approved application or plan.

b. What was accomplished under these goals?

For this reporting period describe: 1) major activities; 2) specific objectives; 3) significant results or key outcomes, including major findings, developments, or conclusions (both positive and negative); and/or 4) other achievements. Include a discussion of stated goals not met. As the project progresses, the emphasis in reporting in this section should shift from reporting activities to reporting accomplishments.

c. What opportunities for training and professional development has the project provided?

Describe opportunities for training and professional development provided to anyone who worked on the project or anyone who was involved in the activities supported by the project. "Training" activities are those in which individuals with advanced professional skills and experience assist others in attaining greater proficiency. Training activities may include, for example, courses or one-on-one work with a mentor. "Professional development" activities result in increased knowledge or skill in one's area of expertise and may include workshops, conferences, seminars, study groups, and individual study. Include participation in conferences, workshops, and seminars not listed under major activities.

If the project was not intended to provide training and professional development opportunities or there is nothing significant to report during this reporting period, state "Nothing to Report."

d. How have the results been disseminated to communities of interest?

Describe how the results have been disseminated to communities of interest. Include any outreach activities that have been undertaken to reach members of communities who are not usually aware of these research activities, for the purpose of enhancing public understanding and increasing interest in learning and careers in science, technology, and the humanities.

If there is nothing significant to report during this reporting period, state "Nothing to Report."

e. What do you plan to do during the next reporting period to accomplish the goals and objectives?

Describe briefly what you plan to do during the next reporting period to accomplish the goals and objectives.

If there are no changes to the agency-approved application or plan for this project or if this is the final report, state "Nothing to Report."

III. PRODUCTS: MANDATORY, if Products Exist

What has the project produced?

Publications are the characteristic product of research. Agencies evaluate what the publications demonstrate about the excellence and significance of the research and the efficacy with which the results are being communicated to colleagues, potential users, and the public, not the number of publications. Many projects (though not all) develop significant products other than publications. Agencies assess and report both publications and other products to Congress, communities of interest, and the public.

List any products resulting from the project during the reporting period. Examples of products include: publications, conference papers, and presentations; website(s) or other Internet site(s); technologies or techniques; inventions, patent applications, and/or licenses; and other products, such as data or databases, physical collections, audio or video products, software or NetWare, models, educational aids or curricula, instruments or equipment, research material, interventions (e.g., clinical or educational), new business creation or any other public release of information related to the project.

If there is nothing significant to report during this reporting period, state "Nothing to Report."

a. Publications, conference papers, and presentations

Report only the major publication(s) resulting from the work under this award. There is no restriction on the number. However, Agencies are interested in only those publications that most reflect the work under this award in the following categories:

- i. **Journal publications.** List peer-reviewed articles or papers appearing in scientific, technical, or professional journals. Include any peer-reviewed publication in the periodically published proceedings of a scientific society, a conference, or the like. A publication in the proceedings of a one-time conference, not part of a series, should be reported under "Books or other non-periodical, one-time publications."

Identify for each publication: Author(s); title; journal; volume; year; page numbers; status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no). Also see instructions under **B. Scientific/Technical Reporting** regarding the submission of accepted manuscripts and other STI as appropriate.

- ii. **Books or other non-periodical, one-time publications.** Report any book, monograph, dissertation, abstract, or the like published as or in a separate publication, rather than a periodical or series. Include any significant publication in the proceedings of a one-time conference or in the report of a one-time study, commission, or the like. Identify for each one-time publication: author(s); title; editor; title of collection, if applicable; bibliographic information; year; type of publication (book, thesis or dissertation, other); status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no).
- iii. **Other publications, conference papers and presentations.** Identify any other publications, conference papers and/or presentations not reported above. Specify the status of the publication as noted above.

b. Website(s) or other Internet site(s)

List the URL for any Internet site(s) that disseminates the results of the research activities. A short description of each site should be provided. It is not necessary to include the publications already specified above in this section.

c. Technologies or techniques

Identify technologies or techniques that have resulted from the research activities. Describe the technologies or techniques and how they are being shared.

d. Inventions, patent applications, and/or licenses

Identify inventions, patent applications with date, and/or licenses that have resulted from the research. Submission of this information as part of an interim or final Research Performance Progress Report is not a substitute for any other invention reporting required under the terms and conditions of an award.

e. Other products

Identify any other significant products that were developed under this project. Describe the product and how it is being shared. Examples of other products are: Data or databases; Physical collections; Audio or video products; Software or NetWare; Models; Educational aids or curricula; Instruments or equipment; Research material (e.g., germplasm, cell lines, DNA probes, animal models); Interventions (e.g. clinical, educational); new business creation; and Other.

IV. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS: MANDATORY

Who has been involved?

Agencies need to know who has worked on the project to gauge and report performance in promoting partnerships and collaborations. The following information on participants and other collaborating organizations during this reporting period must be provided:

1. Participants

What individuals have worked on the project?

Provide the following information for: (1) Project director(s)/Principal investigator(s) (PDs/PIs); and (2) each person who has worked, and was funded by the project, at least one person month per year on the project during the reporting period, regardless of the source of compensation (a person month equals approximately 160 hours of effort). Please note that such reporting does not constitute a formal institutional report of effort on the project, but rather is used by agency program staff to evaluate the progress of the project during a given reporting period.

Provide the name and identify the role the person played in the project. Do NOT include any other identifying information on individuals. Indicate the nearest whole person month (Calendar, Academic, Summer) that the individual worked on the project. Show the most senior role in which the person has worked on the project for any significant length of time. For example, if an undergraduate student graduates, enters graduate school, and continues to work on the project, show that person as a graduate student, preferably explaining the change in involvement. Describe how this person contributed to the project and with what funding support. If information is unchanged from a previous submission, provide the name only and indicate "no change". Identify whether this person is collaborating internationally. Specifically is the person collaborating with an individual located in a foreign country and whether the person had traveled to the foreign country as part of that collaboration and duration of stay. The foreign country(ies) should be identified.

Example:

- 1) **Name:** Mary Smith
- 2) **Project Role:** Graduate Student
- 3) **Nearest person month worked:** 5
- 4) **Contribution to Project:** Ms. Smith has performed work in the area of combined error-control and constrained coding.
- 5) **Funding Support:** The Ford Foundation (Complete only if the funding provided from other than this award.)
- 6) **Collaborated with individual in foreign country:** Yes
- 7) **Country(ies) of foreign collaborator:** China
- 8) **Travelled to foreign country:** Yes
- 9) **If traveled to foreign country(ies), duration of stay:** 5 months

2. Partners

What other organizations have been involved as partners?

Describe partner organizations – academic institutions, other nonprofits, industrial or commercial firms, state or local governments, schools or school systems, or other organizations (foreign or domestic) – that have been involved with the project. Partner organizations may provide financial or in-kind support, supply facilities or equipment, collaborate in the research, exchange personnel, or otherwise contribute.

Provide the following information for each partnership:

1. Organization Name:
2. Location of Organization: (if foreign location list country)
3. Partner's contribution to the project: (identify one or more)
 - i. Financial support;
 - ii. In-kind support (e.g., partner makes software, computers, equipment, etc., available to project staff);
 - iii. Facilities (e.g., project staff use the partner's facilities for project activities);
 - iv. Collaborative research (e.g., partner's staff work with project staff on the project);
 - v. Personnel exchanges (e.g., project staff and/or partner's staff use each other's facilities, work at each other's site).
 - vi. Other
4. More detail on partner and contribution (foreign or domestic).

If there is nothing significant to report during this reporting period, state "Nothing to Report."

3. Other Collaborators

Have other collaborators or contacts been involved?

Some significant collaborators or contacts within the recipient's organization may not be covered by "What people have worked on the project?" Likewise, some significant collaborators or contacts outside the recipient's organization may not be covered under "What other organizations have been involved as partners?"

For example, describe any significant:

1. collaborations with others within the recipient's organization, especially interdepartmental or interdisciplinary collaborations;

2. collaborations or contact with others outside the organization; and
3. collaborations or contacts with others outside the United States or with an international organization.

Identify the state(s), U.S. territory(ies), or country(ies) of collaborations or contacts.

It is likely that many recipients will have no other collaborators or contacts to report.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

V. IMPACT: Optional (but strongly recommended)

What is the impact of the project? How has it contributed?

Over the years, this base of knowledge, techniques, people, and infrastructure is drawn upon again and again for application to commercial technology and the economy, to health and safety, to cost-efficient environmental protection, to the solution of social problems, to numerous other aspects of the public welfare, and to other fields of endeavor.

The taxpaying public and its representatives deserve a periodic assessment to show them how the investments they make benefit the nation. Through this reporting format, and especially this section, recipients provide that assessment and make the case for Federal funding of research and education.

Agencies use this information to assess how their research programs: increase the body of knowledge and techniques; enlarge the pool of people trained to develop that knowledge and techniques or put it to use; and improve the physical, institutional, and information resources that enable those people to get their training and perform their functions.

This component will be used to describe ways in which the work, findings, and specific products of the project have had an impact during this reporting period. Describe distinctive contributions, major accomplishments, innovations, successes, or any change in practice or behavior that has come about as a result of the project relative to: the development of the principal discipline(s) of the project; other disciplines; the development of human resources; teaching and educational experiences; physical, institutional, and information resources that form infrastructure; technology transfer (include transfer of results to entities in government or industry, adoption of new practices, or instances where research has led to the initiation of a startup company); society beyond science and technology; or foreign countries.

a. What was the impact on the development of the principal discipline(s) of the project?

Describe how findings, results, and techniques that were developed or extended, or other products from the project made an impact or are likely to make an impact on the base of knowledge, theory, and research and/or pedagogical methods in the principal disciplinary field(s) of the project. Summarize using language that a lay audience can understand (*Scientific American* style). How the field or discipline is defined is not as important as covering the impact the work has had on knowledge and technique. Make the best distinction possible, for example, by using a “field” or “discipline”, if appropriate, that corresponds with a single academic department (i.e., physics rather than nuclear physics).

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

b. What was the impact on other disciplines?

Describe how the findings, results, or techniques that were developed or improved, or other

products from the project made an impact or are likely to make an impact on other disciplines.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

c. What was the impact on the development of human resources?

Describe how the project made an impact or is likely to make an impact on human resource development in science, engineering, and technology. For example, how has the project: provided opportunities for research and teaching in the relevant fields; improved the performance, skills, or attitudes of members of underrepresented groups that will improve their access to or retention in research, teaching, or other related professions; developed and disseminated new educational materials; provided scholarships; or provided exposure to science and technology for practitioners, teachers, young people, or other members of the public?

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

d. What was the impact on physical, institutional, and information resources that form infrastructure?

Describe ways, if any, in which the project made an impact, or is likely to make an impact, on physical, institutional, and information resources that form infrastructure, including: physical resources such as facilities, laboratories, or instruments; institutional resources (such as establishment or sustenance of societies or organizations); or information resources, electronic means for accessing such resources or for scientific communication, or the like.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

e. What was the impact on technology transfer?

Describe ways in which the project made an impact, or is likely to make an impact, on commercial technology or public use, including: transfer of results to entities in government or industry; instances where the research has led to the initiation of a start-up company; or adoption of new practices.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

f. What was the impact on society beyond science and technology?

Describe how results from the project made an impact, or are likely to make an impact, beyond the bounds of science, engineering, and the academic world on areas such as: improving public knowledge, attitudes, skills, and abilities; changing behavior, practices, decision making, policies (including regulatory policies), or social actions; or improving social, economic, civic, or environmental conditions.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

g. What percentage of the award’s budget was spent in foreign country(ies)?

Describe what percentage of the award’s budget was spent in foreign country(ies). If more than one foreign country is involved, identify the distribution between the foreign countries.

U.S.-based recipients should provide the percentage of the budget spent in the foreign country(ies) and/or, if applicable, the percentage of the budget obligated to foreign entities as first-tier subawards.

Recipients that are not U.S.-based should provide the percentage of the direct award received, excluding all first-tier subawards to U.S. entities. If applicable, provide separately the percentage of the budget obligated to non-U.S. entities as first-tier subawards.

VI. CHANGES/PROBLEMS: Optional (but strongly encouraged); Carryover Amount Mandatory

The PD/PI is reminded that the grantee is required to obtain prior written approval from the Contracting Officer whenever there are significant changes in the project or its direction. Requests for prior written approval must be submitted to the Contracting Officer. If not previously reported in writing, provide the following additional information, if applicable: Changes in approach and reasons for change; Actual or anticipated problems or delays and actions or plans to resolve them; Changes that have a significant impact on expenditures; Significant changes in use or care of animals, human subjects, and/or biohazards.

a. Changes in approach and reasons for change

Describe any changes in approach during the reporting period and reasons for these changes. Remember that significant changes in objectives and scope require prior approval of the Contracting Officer.

b. Actual or anticipated problems or delays and actions or plans to resolve them

Describe problems or delays encountered during the reporting period and actions or plans to resolve them.

c. Changes that have a significant impact on expenditures

Describe changes during the reporting period that may have a significant impact on expenditures, for example, delays in hiring staff or favorable developments that enable meeting objectives at less cost than anticipated.

d. Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents

Describe significant deviations, unexpected outcomes, or changes in approved protocols for the use or care of human subjects, vertebrate animals, biohazards and/or select agents during the reporting period. If required, were these changes approved by the applicable institution committee and reported to the agency? Also specify the applicable Institutional Review Board/Institutional Animal Care and Use Committee approval dates.

e. Change of primary performance site location from that originally proposed

Identify any change to the primary performance site location identified in the proposal, as originally submitted.

f. Carryover Amount

Provide an estimate of the carryover amount expected at the reporting period end date.

VII. DEMOGRAPHIC INFORMATION: Mandatory (providing email addresses)

Provide email addresses for each participant listed in the participant section of this report. Once you submit this report, PAMS will send the participants not registered in PAMS an email inviting

them to register and complete their PAMS person profiles so that any demographic information provided can be collected. Entering demographic information is optional for participants. Demographics are collected for a variety of purposes, including the following:

- to gauge whether our programs and other opportunities are fairly reaching and benefiting everyone regardless of demographic category;
- to ensure that those in under-represented groups have the same knowledge of and access to programs, meetings, vacancies, and other research and educational opportunities as everyone else;
- to gauge and report performance in promoting partnerships and collaborations;
- to assess involvement of international investigators or students in work we support;
- to track the evolution of changing science, technology, engineering and mathematics (STEM) fields at different points in the pipeline (e.g., medicine and law demographics have recently changed dramatically);
- to raise investigator and agency staff awareness of the involvement of under-represented groups in research;
- to encourage the development of creative approaches for tapping into the full spectrum of talent of the STEM workforce;
- to respond to external requests for data of this nature from a variety of sources, including the National Academies, Congress, etc.; and
- to respond to legislatively-required analysis of workforce dynamics. Legislation requires at least one agency to routinely estimate scientific workforce needs. This analysis is accomplished through reviewing demographic data submitted for the existing workforce.

Demographic data (i.e., gender, ethnicity, race, and disability status) is provided directly by significant contributors with the understanding that submission of such data is voluntary. There are no adverse consequences if the data are not provided. Confidentiality of demographic data is in accordance with agency's policies and practices for complying with the requirements of the Privacy Act.

Gender: Male
 Female
 Do not wish to provide

Ethnicity: Hispanic or Latina/o
 Not-Hispanic or not-Latina/o
 Do not wish to provide

Race (select one or more): American Indian or Alaska Native
 Asian
 Black or African American
 Native Hawaiian or other Pacific Islander
 White
 Do not wish to provide

Disability Status:

Yes (check yes if any of the following apply to you)

- Deaf or serious difficulty hearing
- Blind or serious difficulty seeing even when wearing glasses
- Serious difficulty walking or climbing stairs
- Other serious disability related to a physical, mental, or emotional condition.

No

Do not wish to provide

This measure is designed as a binary measure; it encompasses all self-reported disabilities. Please do not use it to report the number of individuals who have different types of disabilities (e.g., hearing impairments).

Demographic data is only disclosed to the person providing the data: DOE can only access the data in aggregate form.

VIII. SPECIAL REPORTING REQUIREMENTS: Mandatory

Respond to any special reporting requirements specified in the award terms and conditions, as well as any award specific reporting requirements.

ASSISTANCE AGREEMENT

1. Award No. DE-SC0022198		2. Modification No.	3. Effective Date 08/15/2021	4. CFDA No. 81.049
5. Awarded To UNIVERSITY OF CALIFORNIA, SANTA BARBARA Attn: CORA DIAZ OFFICE OF RESEARCH 3227 CHEADLE HALL SANTA BARBARA CA 931062050		6. Sponsoring Office Office of Science SC-1 U.S. Department of Energy 1000 Independence Avenue, S.W. Washington DC 20585		7. Period of Performance 08/15/2021 through 08/14/2022
8. Type of Agreement <input checked="" type="checkbox"/> Grant <input type="checkbox"/> Cooperative Agreement <input type="checkbox"/> Other	9. Authority Public Law 95-91, U.S. Department of Energy Organization Act		10. Purchase Request or Funding Document No. 21SC504120	
11. Remittance Address UNIVERSITY OF CALIFORNIA, SANTA BARBARA Attn: CORA DIAZ SAASB BUILDING ROOM 1212 Cashier's Office SANTA BARBARA CA 931062003		12. Total Amount Govt. Share: \$4,440,000.00 Cost Share : \$0.00 Total : \$4,440,000.00		13. Funds Obligated This action: \$1,110,000.00 Total : \$1,110,000.00
14. Principal Investigator	15. Program Manager Matthias J. Graf Phone: 301-903-0874		16. Administrator U.S. Department of Energy Office of Science Consolidated Service Center Office of Grants & Coop Agreements 9800 South Cass Avenue Lemont, IL 60439	
17. Submit Payment Requests To		18. Paying Office Payment - Direct Payment from U.S. Dept of Treasury		19. Submit Reports To See Federal Assistance Reporting Checklist and Instructions
20. Accounting and Appropriation Data KC0202031				
21. Research Title and/or Description of Project Real-time dynamics of driven correlated electrons in quantum materials				
For the Recipient			For the United States of America	
22. Signature of Person Authorized to Sign			25. Signature of Grants/Agreements Officer Signature on File	
23. Name and Title	24. Date Signed	26. Name of Officer Warren Riley		27. Date Signed 09/23/2021

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED
DE-SC0022198

PAGE OF
2 | 2

NAME OF OFFEROR OR CONTRACTOR
UNIVERSITY OF CALIFORNIA, SANTA BARBARA

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>DUNS Number: 094878394 SCHEDULE</p> <p>PURPOSE:</p> <p>This unilateral new award obligates funds for the budget period commencing on the Effective Date specified in Block No. 3 and continuing through the Period of Performance end date specified in Block No. 7. The Special Terms and Conditions, attached hereto, are made a part hereof.</p> <p>CONTACT INFORMATION:</p> <p>Recipient Business Officer:</p> <p>Kyle Hekhuis 805-893-3890 proposals@research.ucsb.edu See Address in Block 5 of Assistance Agreement</p> <p>Recipient Principal Investigator (Block 14 Continued):</p> <p>Vojtech Vlcek 805-893-8906</p> <p>DOE Program Manager (Block 15 Continued):</p> <p>Matthias Graf Matthias.Graf@science.doe.gov See Address in Block 6 of Assistance Agreement</p> <p>DOE Assistance Agreement Administrator:</p> <p>Nathanael Heinz 630-252-2332 Nathanael.Heinz@science.doe.gov See Address in Block 16 of Assistance Agreement</p> <p>THE TEXT BELOW IS FOR DOE INTERNAL USE ONLY: ASAP: YES Extent Competed: COMPETED Davis-Bacon Act: NO PI: Vlcek, Vojtech Fund: 00500 Appr Year: 2021 Allottee: 61 Report Entity: 481037 Object Class: 41010 Program: 2924506 Project: 1022601 WFO: 0000000 Local Use: 0000000</p>				

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 1

OMB Number: 4040-0001

Expiration Date: 10/31/2019

* ORGANIZATIONAL DUNS: 094878394

* Budget Type: Project

Enter name of Organization: Regents of the University of California, Santa Barbara

* Start Date: 8/15/2021 * End Date: 8/14/2022 Budget Period 1

A. Senior/Key Person

	Prefix	* First Name	Middle Name	* Last Name	Suffix	* Project Role	Base Salary (\$)	Cal. Months	Acad. Months	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	Funds Requested (\$)
1.		Vojtech		Vlcek		PD/PI	13,976.00			1	13,976.00	1,398.00	15,374.00
2.													
3.													
4.													
5.													
6.													
7.													
8.													
9.	Total Funds requested for all Senior Key Persons in the attached file												
												Total Senior/Key Person	15,374.00

Additional Senior Key Persons:

B. Other Personnel

* Number of Personnel	* Project Role	Cal. Months	Acad. Months	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	Funds Requested (\$)	
2	Post Doctoral Associates	12			109,080.00	25,743.00	134,823.00	
	Graduate Students							
	Undergraduate Students							
	Secretarial/Clerical							
2	Total Number Other Personnel	Total Other Personnel					134,823.00	
							Total Salary, Wages and Fringe Benefits (A+B)	150,197.00

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 1

C. Equipment Description

List items and dollar amount for each item exceeding \$5,000

	Equipment Item	* Funds Requested (\$)
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.	Total Funds requested for all equipment listed in the attached file	
	Total Equipment	

Additional Equipment:

D. Travel	Funds Requested (\$)
1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)	13,468.00
2. Foreign Travel Costs	
Total Travel Cost	13,468.00

E. Participant/Trainee Support Costs	Funds Requested (\$)
1. Tuition/Fees/Health Insurance	
2. Stipends	
3. Travel	
4. Subsistence	
5. Other <input type="text"/>	
<input type="checkbox"/> Number of Participant/Trainees	Total Participant/Trainee Support Costs

RESEARCH & RELATED BUDGET - SECTION F-K, BUDGET PERIOD 1

F. Other Direct Costs		Funds Requested (\$)
1.	Materials and Supplies	
2.	Publication Costs	300.00
3.	Consultant Services	
4.	ADP/Computer Services	
5.	Subawards/Consortium/Contractual Costs	827,145.00
6.	Equipment or Facility Rental/User Fees	
7.	Alterations and Renovations	
8.	(Communication Costs)	90.00
9.		
10.		
Total Other Direct Costs		827,535.00

G. Direct Costs	Funds Requested (\$)
Total Direct Costs (A thru F)	991,200.00

H. Indirect Costs				
	Indirect Cost Type	Indirect Cost Rate (%)	Indirect Cost Base (\$)	Funds Requested (\$)
1.	On Campus Org Research	55.50	214,055.00	118,800.00
2.				
3.				
4.				
Total Indirect Costs				118,800.00

Cognizant Federal Agency DHHS, Cora Coleman, (415) 437-7820
 (Agency Name, POC Name and POC Phone Number)

I. Total Direct and Indirect Costs	Funds Requested (\$)
Total Direct and Indirect Institutional Costs (G + H)	1,110,000.00

J. Fee

Funds Requested
(\$)

K. Total Costs and Fee

Funds Requested
(\$)

Total Costs and Fee (I + J)

L. * Budget Justification:

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 2

OMB Number: 4040-0001

Expiration Date: 10/31/2019

* ORGANIZATIONAL DUNS: 094878394

* Budget Type: Project

Enter name of Organization: Regents of the University of California, Santa Barbara

* Start Date: 8/15/2022 * End Date: 8/14/2023 Budget Period 2

A. Senior/Key Person

	Prefix	* First Name	Middle Name	* Last Name	Suffix	* Project Role	Base Salary (\$)	Cal. Months	Acad. Months	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	Funds Requested (\$)
1.		Vojtech		Vlcek		PD/PI	14,955.00			1	14,955.00	1,496.00	16,451.00
2.													
3.													
4.													
5.													
6.													
7.													
8.													
9.	Total Funds requested for all Senior Key Persons in the attached file												
												Total Senior/Key Person	16,451.00

Additional Senior Key Persons:

B. Other Personnel

* Number of Personnel	* Project Role	Cal. Months	Acad. Months	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	Funds Requested (\$)	
2	Post Doctoral Associates	12			113,424.00	26,768.00	140,192.00	
	Graduate Students							
	Undergraduate Students							
	Secretarial/Clerical							
2	Total Number Other Personnel	Total Other Personnel						140,192.00
							Total Salary, Wages and Fringe Benefits (A+B)	156,643.00

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 2

C. Equipment Description

List items and dollar amount for each item exceeding \$5,000

	Equipment Item	* Funds Requested (\$)
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.	Total Funds requested for all equipment listed in the attached file	
	Total Equipment	

Additional Equipment:

D. Travel	Funds Requested (\$)
1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)	21,355.00
2. Foreign Travel Costs	
Total Travel Cost	21,355.00

E. Participant/Trainee Support Costs	Funds Requested (\$)
1. Tuition/Fees/Health Insurance	
2. Stipends	
3. Travel	
4. Subsistence	
5. Other <input type="text"/>	
<input type="checkbox"/> Number of Participant/Trainees	Total Participant/Trainee Support Costs

RESEARCH & RELATED BUDGET - SECTION F-K, BUDGET PERIOD 2

F. Other Direct Costs		Funds Requested (\$)
1.	Materials and Supplies	
2.	Publication Costs	400.00
3.	Consultant Services	
4.	ADP/Computer Services	
5.	Subawards/Consortium/Contractual Costs	832,451.00
6.	Equipment or Facility Rental/User Fees	
7.	Alterations and Renovations	
8.	(Communication Costs)	90.00
9.		
10.		
Total Other Direct Costs		832,941.00

G. Direct Costs	Funds Requested (\$)
Total Direct Costs (A thru F)	1,010,939.00

H. Indirect Costs				
	Indirect Cost Type	Indirect Cost Rate (%)	Indirect Cost Base (\$)	Funds Requested (\$)
1.	On Campus Org Research	55.50	178,488.00	99,061.00
2.				
3.				
4.				
Total Indirect Costs				99,061.00

Cognizant Federal Agency DHHS, Cora Coleman, (415) 437-7820
 (Agency Name, POC Name and POC Phone Number)

I. Total Direct and Indirect Costs	Funds Requested (\$)
Total Direct and Indirect Institutional Costs (G + H)	1,110,000.00

J. Fee

Funds Requested
(\$)

K. Total Costs and Fee

Funds Requested
(\$)

Total Costs and Fee (I + J)

L. * Budget Justification:

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 3

OMB Number: 4040-0001

Expiration Date: 10/31/2019

* ORGANIZATIONAL DUNS: 094878394

* Budget Type: Project

Enter name of Organization: Regents of the University of California, Santa Barbara

* Start Date: 8/15/2023 * End Date: 8/14/2024 Budget Period 3

A. Senior/Key Person

	Prefix	* First Name	Middle Name	* Last Name	Suffix	* Project Role	Base Salary (\$)	Cal. Months	Acad. Months	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	Funds Requested (\$)
1.		Vojtech		Vlcek		PD/PI	15,254.00			1	15,254.00	1,525.00	16,779.00
2.													
3.													
4.													
5.													
6.													
7.													
8.													
9.	Total Funds requested for all Senior Key Persons in the attached file												
												Total Senior/Key Person	16,779.00

Additional Senior Key Persons:

B. Other Personnel

* Number of Personnel	* Project Role	Cal. Months	Acad. Months	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	Funds Requested (\$)	
2	Post Doctoral Associates	12			109,080.00	25,743.00	134,823.00	
	Graduate Students							
	Undergraduate Students							
	Secretarial/Clerical							
2	Total Number Other Personnel	Total Other Personnel					134,823.00	
							Total Salary, Wages and Fringe Benefits (A+B)	151,602.00

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 3

C. Equipment Description

List items and dollar amount for each item exceeding \$5,000

	Equipment Item	* Funds Requested (\$)
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.	Total Funds requested for all equipment listed in the attached file	
	Total Equipment	

Additional Equipment:

D. Travel	Funds Requested (\$)
1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)	20,635.00
2. Foreign Travel Costs	
Total Travel Cost	20,635.00

E. Participant/Trainee Support Costs	Funds Requested (\$)
1. Tuition/Fees/Health Insurance	
2. Stipends	
3. Travel	
4. Subsistence	
5. Other <input type="text"/>	
<input type="checkbox"/> Number of Participant/Trainees	Total Participant/Trainee Support Costs

RESEARCH & RELATED BUDGET - SECTION F-K, BUDGET PERIOD 3

F. Other Direct Costs		Funds Requested (\$)
1.	Materials and Supplies	
2.	Publication Costs	350.00
3.	Consultant Services	
4.	ADP/Computer Services	
5.	Subawards/Consortium/Contractual Costs	841,487.00
6.	Equipment or Facility Rental/User Fees	
7.	Alterations and Renovations	
8.	(Communication Fee)	90.00
9.		
10.		
Total Other Direct Costs		841,927.00

G. Direct Costs	Funds Requested (\$)
Total Direct Costs (A thru F)	1,014,164.00

H. Indirect Costs				
	Indirect Cost Type	Indirect Cost Rate (%)	Indirect Cost Base (\$)	Funds Requested (\$)
1.	On Campus Org Research	55.50	172,677.00	95,836.00
2.				
3.				
4.				
Total Indirect Costs				95,836.00

Cognizant Federal Agency DHHS, Cora Coleman, (415) 437-7820
 (Agency Name, POC Name and POC Phone Number)

I. Total Direct and Indirect Costs	Funds Requested (\$)
Total Direct and Indirect Institutional Costs (G + H)	1,110,000.00

J. Fee

Funds Requested
(\$)

K. Total Costs and Fee

Funds Requested
(\$)

Total Costs and Fee (I + J)

L. * Budget Justification:

RESEARCH & RELATED BUDGET - SECTION A & B, BUDGET PERIOD 4

OMB Number: 4040-0001

Expiration Date: 10/31/2019

* ORGANIZATIONAL DUNS: 094878394

* Budget Type: Project

Enter name of Organization: Regents of the University of California, Santa Barbara

* Start Date: 8/15/2024 * End Date: 8/14/2025 Budget Period 4

A. Senior/Key Person

	Prefix	* First Name	Middle Name	* Last Name	Suffix	* Project Role	Base Salary (\$)	Cal. Months	Acad. Months	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	Funds Requested (\$)
1.		Vojtech		Vlcek		PD/PI	15,559.00			1	15,559.00	1,556.00	17,115.00
2.													
3.													
4.													
5.													
6.													
7.													
8.													
9.	Total Funds requested for all Senior Key Persons in the attached file												
												Total Senior/Key Person	17,115.00

Additional Senior Key Persons:

B. Other Personnel

* Number of Personnel	* Project Role	Cal. Months	Acad. Months	Sum. Months	* Requested Salary (\$)	* Fringe Benefits (\$)	Funds Requested (\$)	
2	Post Doctoral Associates	12			113,424.00	26,768.00	140,192.00	
	Graduate Students							
	Undergraduate Students							
	Secretarial/Clerical							
2	Total Number Other Personnel	Total Other Personnel						140,192.00
							Total Salary, Wages and Fringe Benefits (A+B)	157,307.00

RESEARCH & RELATED BUDGET - SECTION C, D, & E, BUDGET PERIOD 4

C. Equipment Description

List items and dollar amount for each item exceeding \$5,000

	Equipment Item	* Funds Requested (\$)
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.	Total Funds requested for all equipment listed in the attached file	
	Total Equipment	

Additional Equipment:

D. Travel	Funds Requested (\$)
1. Domestic Travel Costs (Incl. Canada, Mexico, and U.S. Possessions)	10,757.00
2. Foreign Travel Costs	
Total Travel Cost	10,757.00

E. Participant/Trainee Support Costs	Funds Requested (\$)
1. Tuition/Fees/Health Insurance	
2. Stipends	
3. Travel	
4. Subsistence	
5. Other <input type="text"/>	
<input type="checkbox"/> Number of Participant/Trainees	Total Participant/Trainee Support Costs

RESEARCH & RELATED BUDGET - SECTION F-K, BUDGET PERIOD 4

F. Other Direct Costs		Funds Requested (\$)
1.	Materials and Supplies	
2.	Publication Costs	
3.	Consultant Services	
4.	ADP/Computer Services	
5.	Subawards/Consortium/Contractual Costs	848,578.00
6.	Equipment or Facility Rental/User Fees	
7.	Alterations and Renovations	
8.	(Communication Costs)	53.00
9.		
10.		
Total Other Direct Costs		848,631.00

G. Direct Costs	Funds Requested (\$)
Total Direct Costs (A thru F)	1,016,695.00

H. Indirect Costs				
	Indirect Cost Type	Indirect Cost Rate (%)	Indirect Cost Base (\$)	Funds Requested (\$)
1.	On Campus Org Research	55.50	168,117.00	93,305.00
2.				
3.				
4.				
Total Indirect Costs				93,305.00

Cognizant Federal Agency DHHS, Cora Coleman, (415) 437-7820
 (Agency Name, POC Name and POC Phone Number)

I. Total Direct and Indirect Costs	Funds Requested (\$)
Total Direct and Indirect Institutional Costs (G + H)	1,110,000.00

J. Fee

Funds Requested
(\$)

K. Total Costs and Fee

Funds Requested
(\$)

Total Costs and Fee (I + J)

L. * Budget Justification:

RESEARCH & RELATED BUDGET - Cumulative Budget

		Totals (\$)
A, Senior/Key Person		65,719.00
Section B, Other Personnel		550,030.00
Total Number Other Personnel	8	
Total Salary, Wages and Fringe Benefits (A+B)		615,749.00
Section C, Equipment		
Section D, Travel		66,215.00
1. Domestic	66,215.00	
2. Foreign		
Section E, Participant/Trainee Support Costs		
1. Tuition/Fees/Health Insurance		
2. Stipends		
3. Travel		
4. Subsistence		
5. Other		
6. Number of Participant/Trainees		
Section F, Other Direct Costs		3,351,034.00
1. Materials and Supplies		
2. Publication Costs	1,050.00	
3. Consultant Services		
4. ADP/Computer Services		
5. Subawards/Consortium/Contractual Costs	3,349,661.00	
6. Equipment or Facility Rental/User Fees		
7. Alterations and Renovations		
8. Other 1	323.00	
9. Other 2		
10. Other 3		
Section G, Direct Costs (A thru F)		4,032,998.00
Section H, Indirect Costs		407,002.00
Section I, Total Direct and Indirect Costs (G + H)		4,440,000.00

Section J, Fee

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Section K, Total Costs and Fee (I + J)

4,440,000.00

SPECIAL TERMS AND CONDITIONS

FA-TC-0001-CH LEGAL AUTHORITY AND EFFECT (DECEMBER 2014)

- a. A DOE financial assistance award is valid only if it is in writing and is signed, either in writing or electronically, by a DOE Contracting Officer. This individual is reflected as the Grants/Agreements Officer on the Assistance Agreement.
- b. Recipients are free to accept or reject the award. Acceptance of the award is effected by:
 - 1. Performance;
 - 2. Recipient’s submission of a request for payment;
 - 3. Recipient’s withdrawal of funds obligated; or
 - 4. Recipient’s signature on the Assistance Agreement.

FA-TC-0001A RESOLUTION OF CONFLICTING CONDITIONS

Any apparent inconsistency between Federal statutes and regulations and the terms and conditions contained in this award must be referred to the DOE Award Administrator for guidance.

FA-TC-0001B-CH PART 605 AWARD AGREEMENT CONTENTS (APRIL 2017)

This award/agreement consists of the Assistance Agreement cover page, plus the following:

- a. Special terms and conditions.
- b. Attachments:
 - Attachment No. Title
 - 1 Intellectual Property Provisions
 - 2 Federal Assistance Reporting Checklist and Instructions
 - 3 Budget Pages
 - 4 If the award is for research, the Federal-Wide Research Terms and Conditions and DOE Agency Specific Requirements, available at <https://www.nsf.gov/awards/managing/rtc.jsp>
- c. Applicable program regulations, 10 CFR 605 at <http://www.eCFR.gov>.
- d. DOE Assistance Regulations, 2 CFR part 200 as amended by 2 CFR part 910 at <http://www.eCFR.gov>.
- e. Application/proposal as approved by DOE.
- f. National Policy Assurances to Be Incorporated as Award Terms in effect on date of award at <http://www.nsf.gov/awards/managing/rtc.jsp>.

FA-TC-0001C AWARD PROJECT PERIOD AND BUDGET PERIODS

The Project Period for this award is 8/15/2021 through 8/14/2025 consisting of the following Budget Periods.

Budget Period	Start Date	End Date	Government Share
1	8/15/2021	8/14/2022	\$1,110,000.00
2	8/15/2022	8/14/2023	\$1,110,000.00
3	8/15/2023	8/14/2024	\$1,110,000.00
4	8/15/2024	8/14/2025	\$1,110,000.00

FA-TC-0002.1 CONFERENCE SPENDING (FEBRUARY 2015)

The recipient shall not expend any funds on a conference not directly and programmatically related to the purpose for which the grant or cooperative agreement was awarded that would defray the cost to the United States Government of a conference held by any Executive branch department, agency, board, commission, or office for which the cost to the United States Government would otherwise exceed \$20,000, thereby circumventing the required notification by the head of any such Executive Branch department, agency, board, commission, or office to the Inspector General (or senior ethics official for any entity without an Inspector General), of the date, location, and number of employees attending such conference.

FA-TC-0003.1 PAYMENT PROCEDURES - ADVANCES THROUGH THE AUTOMATED STANDARD APPLICATION FOR PAYMENTS (ASAP) SYSTEM

- a. Method of Payment. Payment will be made by advances through the Department of Treasury's ASAP system.
- b. Requesting Advances. Requests for advances must be made through the ASAP system. You may submit requests as frequently as required to meet your needs to disburse funds for the Federal share of project costs. If feasible, you should time each request so that you receive payment on the same day that you disburse funds for direct project costs and the proportionate share of any allowable indirect costs. If same-day transfers are not feasible, advance payments must be as close as is administratively feasible to actual disbursements.
- c. Adjusting payment requests for available cash. You must disburse any funds that are available from repayments to and interest earned on a revolving fund, program income, rebates, refunds, contract settlements, audit recoveries, credits, discounts, and interest earned on any of those funds before requesting additional cash payments from DOE.
- d. Payments. All payments are made by electronic funds transfer to the bank account identified on the ASAP Bank Information Form that you filed with the U.S. Department of Treasury.

FA-TC-0006 DIRECT PAYMENT BY DOE/NNSA OF FEDERALLY FUNDED RESEARCH AND DEVELOPMENT CENTER (FFRDC) CONTRACTOR COST

For the purposes of this term, Total Estimated Cost of Project includes DOE/NNSA FFRDC contractor costs. The DOE/NNSA FFRDC contractor cost is not included in the total approved budget for this award, because DOE/NNSA will pay the DOE/NNSA FFRDC contractor portion of the effort under an existing DOE/NNSA contract. Recipient is not responsible for reporting on that portion of the total estimated cost that is paid directly to the DOE/NNSA FFRDC contractor.

FA-TC -0007.1 REBUDGETING AND RECOVERY OF INDIRECT COSTS - REIMBURSABLE INDIRECT COSTS AND FRINGE BENEFITS

- a. If actual allowable indirect costs are less than those budgeted and funded under the award, you may use the difference to pay additional allowable direct costs during the project period. If at the completion of the award the Government's share of total allowable costs (i.e., direct and indirect), is less than the total costs reimbursed, you must refund the difference.
- b. Recipients are expected to manage their indirect costs. DOE will not amend an award solely to provide additional funds for changes in indirect cost rates. DOE recognizes that the inability to obtain full reimbursement for indirect costs means the recipient must absorb the underrecovery. Such underrecovery may be allocated as part of the organization's required cost sharing.

FA-TC-0010 STATEMENT OF FEDERAL STEWARDSHIP

DOE will exercise normal Federal stewardship in overseeing the project activities performed under this award. Stewardship activities include, but are not limited to, conducting site visits; reviewing performance and financial reports; providing technical assistance and/or temporary intervention in unusual circumstances to correct deficiencies which develop during the project; assuring compliance with terms and conditions; and reviewing technical performance after project completion to ensure that the award objectives have been accomplished.

FA-TC-0012 SITE VISITS

DOE authorized representatives have the right to make site visits at reasonable times to review project accomplishments and management control systems and to provide technical assistance, if required. You must provide, and must require your subrecipients to provide, reasonable access to facilities, office space, resources, and assistance for the safety and convenience of the government representatives in the performance of their duties. All site visits and evaluations must be performed in a manner that does not unduly interfere with or delay the work.

FA-TC-0013 REPORTING REQUIREMENTS

- a. Requirements. The reporting requirements for this award are identified on the Federal Assistance Reporting Checklist and Instructions, DOE F 4600.2, attached to this award. Failure to comply with these reporting requirements is considered a material noncompliance with the terms of the award. Noncompliance may result in withholding of future payments, suspension, or termination of the current award, and withholding of future awards. A willful failure to perform, a history of failure to perform, or unsatisfactory performance of this and/or other financial assistance awards, may also result in a debarment action to preclude future awards by Federal agencies.
- b. Dissemination of scientific/technical reports. Scientific/technical reports submitted under this award will be disseminated on the Internet via the DOE Information Bridge (www.osti.gov/bridge), unless the report contains patentable material, protected data, or SBIR/STTR data. Citations for journal articles produced under the award will appear on the DOE Energy Citations Database (www.osti.gov/energycitations).
- c. Restrictions. Reports submitted to the DOE Information Bridge must not contain any Protected Personal Identifiable Information (PII), limited rights data (proprietary data), classified information, information subject to export control classification, or other information not subject to release.

FA-TC-0014-CH PUBLICATIONS

- a. You are encouraged to publish or otherwise make publicly available the results of the work conducted under the award.
- b. An acknowledgment of Federal support and a disclaimer must appear in the publication of any material, whether copyrighted or not, based on or developed under this project, as follows:

Acknowledgment: "This material is based upon work supported by the U.S. Department of Energy, Office of Science, Office of [*insert the SC Program Office funding the award, e.g., Basic Energy Sciences*], [*Add any additional acknowledgements or information requested by the sponsoring SC Program Office*] under Award Number(s) [*Enter the award number(s)*]."

Disclaimer: "This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency

thereof."

FA-TC-0015 FEDERAL, STATE, AND MUNICIPAL REQUIREMENTS

You must obtain any required permits and comply with applicable federal, state, and municipal laws, codes, and regulations for work performed under this award.

FA-TC-0016 INTELLECTUAL PROPERTY PROVISIONS AND CONTACT INFORMATION

- a. The intellectual property provisions applicable to this award are provided as an attachment to this award or are referenced on the Assistance Agreement Face Page. A list of all intellectual property provisions may be found at <http://energy.gov/gc/standard-intellectual-property-ip-provisions-financial-assistance-awards>.
- b. Questions regarding intellectual property matters should be referred to the DOE Award Administrator and the Patent Counsel designated as the service provider for the DOE office that issued the award. The IP Service Providers List is found at <http://energy.gov/gc/downloads/intellectual-property-ip-service-providers-acquisition-and-assistance-transactions>.

FA-TC-0017.1 NATIONAL SECURITY: CLASSIFIABLE RESULTS ORIGINATING UNDER AN AWARD (DECEMBER 2014)

- a. This award is intended for unclassified, publicly releasable research. You will not be granted access to classified information. DOE/NNSA does not expect that the results of the research project will involve classified information. Under certain circumstances, however, a classification review of information originated under the award may be required. The Department may review research work generated under this award at any time to determine if it requires classification.
- b. Executive Order 12958 (60 Fed. Reg. 19,825 (1995)) states that basic scientific research information not clearly related to the national security shall not be classified. Nevertheless, some information concerning (among other things) scientific, technological, or economic matters relating to national security or cryptology may require classification. If you originate information during the course of this award that you believe requires classification, you must promptly:
 1. Notify the DOE Project Officer and the DOE Award Administrator;
 2. Submit the information by registered mail directly to the Director, Office of Classification and Information Control, SO-10.2; U.S. Department of Energy; P.O. Box A; Germantown, MD 20875-0963, for classification review.
 3. Restrict access to the information to the maximum extent possible until you are informed that the information is not classified, but no longer than 30 days after receipt by the Director, Office of Classification and Information Control.
- c. If you originate information concerning the production or utilization of special nuclear material (i.e., plutonium, uranium enriched in the isotope 233 or 235, and any other material so determined under section 51 of the Atomic Energy Act) or nuclear energy, you must:
 1. Notify the DOE Project Officer and the DOE Award Administrator;
 2. Submit the information by registered mail directly to the Director, Office of Classification and Information Control, SO-10.2; U.S. Department of Energy; P. O. Box A; Germantown, MD 20875-0963 for classification review within 180 days of the date the recipient first discovers or first has reason to believe that the information is useful in such production or utilization; and
 3. Restrict access to the information to the maximum extent possible until you are informed that the information is not classified, but no longer than 90 days after receipt by the Director, Office of Classification and Information Control.
- d. If DOE determines any of the information requires classification, you agree that the Government may terminate the award with consent of the recipient in accordance with 2 CFR part 200.339(a)(3). All material deemed to be classified must be forwarded to the DOE, in a manner specified by DOE.

- e. If DOE does not respond within the specified time periods, you are under no further obligation to restrict access to the information.

FA-TC-0018.2 CONTINUATION APPLICATION AND FUNDING - AWARDS UNDER 10 CFR 605 (FEBRUARY 2015)

- a. Continuation Application. A continuation application is a non-competitive application for an additional budget period within a previously approved project period. At least 90 days before the end of each budget period, you must submit your continuation application through the Office of Science's Portfolio Analysis Management System (PAMS) at <https://pamspublic.science.energy.gov/webpamsepxexternal/login.aspx>.

Your continuation application must include the following information:

1. A report on your progress towards meeting the objectives of the project, including any significant findings, conclusions, or developments, and an estimate of any unobligated balances remaining at the end of the budget period. If the remaining unobligated balance is estimated to exceed 10 percent of the funds available for the budget period, explain why the excess funds have not been obligated and how they will be used in the next budget period.
 2. A completed budget page and supporting justification for the upcoming budget period when a change (increase or decrease) to anticipated future costs will exceed 25 percent of the original recommended future budget or when a budget for the upcoming budget period was not approved at the time of award.
 3. A description of your plans for the conduct of the project during the upcoming budget period, if there are changes from the DOE approved application.
- b. Continuation Funding. Continuation funding is contingent on (1) availability of funds appropriated by Congress for the purpose of this program; (2) the availability of future-year budget authority; (3) substantial progress towards meeting the objectives of your approved application; (4) submittal of required reports; and (5) compliance with the terms and conditions of the award.

FA-TC-0020 NOTICE REGARDING THE PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS -- SENSE OF CONGRESS

It is the sense of the Congress that, to the greatest extent practicable, all equipment and products purchased with funds made available under this award should be American-made.

FA-TC-0023 ENVIRONMENTAL, SAFETY AND HEALTH (ES&H) PERFORMANCE OF WORK AT DOE FACILITIES

With respect to the performance of any portion of the work under this award which is performed at a DOE-owned or controlled site, the recipient agrees to comply with all State and Federal ES&H regulations and with all other ES&H requirements of the operator of such site.

Prior to the performance on any work at a DOE-Owned or controlled site, the recipient shall contact the site facility manager for information on DOE and site specific ES&H requirements.

The recipient shall apply this term to its sub-recipients and contractors.

FA-TC-0025A INSURANCE COVERAGE (DECEMBER 2014)

See 2 CFR 200.310 for insurance requirements for real property and equipment acquired or improved with Federal funds.

FA-TC-0025D EQUIPMENT (DECEMBER 2014)

Subject to the conditions provided in 2 CFR Part 200.313, title to equipment (property) acquired under a Federal award will vest conditionally with the non-Federal entity.

The non-Federal entity cannot encumber this property and must follow the requirements of 2 CFR Part 200.313 before disposing of the property.

States must use equipment acquired under a Federal award by the state in accordance with state laws and procedures.

Equipment must be used by the non-Federal entity in the program or project for which it was acquired as long as it is needed, whether or not the project or program continues to be supported by the Federal award. When no longer needed for the originally authorized purpose, the equipment may be used by programs supported by the Federal awarding agency in the priority order specified in 2 CFR Part 200.313(c)(1)(i) and (ii).

Management requirements, including inventory and control systems, for equipment are provided in 2 CFR Part 200.313(d).

When equipment acquired under a Federal award is no longer needed, the non-Federal entity must obtain disposition instructions from the Federal awarding agency or pass-through entity.

Disposition will be made as follows: (a) items of equipment with a current fair market value of \$5,000 or less may be retained, sold, or otherwise disposed of with no further obligation to the Federal awarding agency;

(b) Non-Federal entity may retain title or sell the equipment after compensating the Federal awarding agency as described in 2 CFR Part 200.313(e)(2); or (c) transfer title to the Federal awarding agency or to an eligible third party as specified in CFR Part 200.313(e)(3).

See 2 CFR Part 200.313 for additional requirements pertaining to equipment acquired under a Federal award.

Also see 2 CFR Part 910.360 for additional requirements for Equipment for For-Profit recipients.

See also 2 CFR Part 200.439 Equipment and other capital expenditures.

FA-TC-0025E SUPPLIES (DECEMBER 2014)

See 2 CFR Part 200.314 for requirements pertaining to supplies acquired under a Federal award

See also § 200.453 Materials and supplies costs, including costs of computing devices.

FA-TC-0025G PROPERTY TRUST RELATIONSHIP (DECEMBER 2014)

Real property, equipment, and intangible property, that are acquired or improved with a Federal award must be held in trust by the non-Federal entity as trustee for the beneficiaries of the project or program under which the property was acquired or improved.

See 2 CFR Part 200.316 for additional requirements pertaining to real property, equipment, and intangible property acquired or improved under a Federal award.

FA-TC-0041 REPORTING SUBAWARDS AND EXECUTIVE COMPENSATION

a. Reporting of first-tier subawards.

1. Applicability. Unless you are exempt as provided in paragraph d. of this award term, you must report each action that obligates \$25,000 or more in Federal funds that does not include Recovery funds (as defined in section 1512(a)(2) of the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5) for a subaward to an entity (see definitions in paragraph e. of this award term).
2. Where and when to report.
 - i. You must report each obligating action described in paragraph a.1. of this award term to <http://www.fsrs.gov>.
 - ii. For subaward information, report no later than the end of the month following the month in which the obligation was made. (For example, if the obligation was made on November 7, 2010, the obligation must be reported by no later than December 31, 2010.)
3. What to report. You must report the information about each obligating action that the submission instructions posted at <http://www.fsrs.gov> specify.

b. Reporting Total Compensation of Recipient Executives.

1. Applicability and what to report. You must report total compensation for each of your five most highly compensated executives for the preceding completed fiscal year, if
 - i. the total Federal funding authorized to date under this award is \$25,000 or more;
 - ii. in the preceding fiscal year, you received;
 - (A) 80 percent or more of your annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards); and
 - (B) \$25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards); and
 - iii. The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>.)
 2. Where and when to report. You must report executive total compensation described in paragraph b.1. of this award term:
 - i. As part of your registration profile at <http://www.sam.gov>.
 - ii. By the end of the month following the month in which this award is made, and annually thereafter.
- c. Reporting of Total Compensation of Subrecipient Executives.
1. Applicability and what to report. Unless you are exempt as provided in paragraph d. of this award term, for each first-tier subrecipient under this award, you shall report the names and total compensation of each of the subrecipient's five most highly compensated executives for the subrecipient's preceding completed fiscal year, if;
 - i. in the subrecipient's preceding fiscal year, the subrecipient received;
 - (A) 80 percent or more of its annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 CFR 170.320 (and subawards); and
 - (B) \$25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts), and Federal financial assistance subject to the Transparency Act (and subawards); and
 - ii. The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>.)
 2. Where and when to report. You must report subrecipient executive total compensation described in paragraph c.1. of this award term:
 - i. To the recipient.
 - ii. By the end of the month following the month during which you make the subaward. For example, if a subaward is obligated on any date during the month of October of a given year (i.e., between October 1 and 31), you must report any required compensation information of the subrecipient by November 30 of that year.
- d. Exemptions
- If, in the previous tax year, you had gross income, from all sources, under \$300,000, you are exempt from the requirements to report:
- i. Subawards, and

- ii. The total compensation of the five most highly compensated executives of any subrecipient.
- e. Definitions. For purposes of this award term:
1. Entity means all of the following, as defined in 2 CFR part 25:
 - i. Governmental organization, which is a State, local government, or Indian tribe;
 - ii. A foreign public entity;
 - iii. A domestic or foreign nonprofit organization;
 - iv. A domestic or foreign for-profit organization;
 - v. A Federal agency, but only as a subrecipient under an award or subaward to a non-Federal entity.
 2. Executive means officers, managing partners, or any other employees in management positions.
 3. Subaward:
 - i. This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which you received this award and that you as the recipient award to an eligible subrecipient.
 - ii. The term does not include your procurement of property and services needed to carry out the project or program (for further explanation, see Sec. __ .210 of the attachment to OMB Circular A-133, Audits of States, Local Governments, and Non-Profit Organizations).
 - iii. A subaward may be provided through any legal agreement, including an agreement that you or a subrecipient considers a contract.
 4. Subrecipient means an entity that:
 - i. Receives a subaward from you (the recipient) under this award; and
 - ii. Is accountable to you for the use of the Federal funds provided by the subaward.
 5. Total compensation means the cash and noncash dollar value earned by the executive during the recipient's or subrecipient's preceding fiscal year and includes the following (for more information see 17 CFR 229.402(c)(2)):
 - i. Salary and bonus.
 - ii. Awards of stock, stock options, and stock appreciation rights. Use the dollar amount recognized for financial statement reporting purposes with respect to the fiscal year in accordance with the Statement of Financial Accounting Standards No. 123 (Revised 2004) (FAS 123R), Shared Based Payments.
 - iii. Earnings for services under non-equity incentive plans. This does not include group life, health, hospitalization or medical reimbursement plans that do not discriminate in favor of executives, and are available generally to all salaried employees.
 - iv. Change in pension value. This is the change in present value of defined benefit and actuarial pension plans.
 - v. Above-market earnings on deferred compensation which is not tax-qualified.
 - vi. Other compensation, if the aggregate value of all such other compensation (e.g. severance, termination payments, value of life insurance paid on behalf of the employee, perquisites or property) for the executive exceeds \$10,000.

FA-TC-0042 SYSTEM FOR AWARD MANAGEMENT AND UNIVERSAL IDENTIFIER REQUIREMENTS

A. Requirement for Registration in the System for Award Management (SAM)

Unless you are exempted from this requirement under 2 CFR 25.110, you as the recipient must maintain the currency of your information in SAM until you submit the final financial report required

under this award or receive the final payment, whichever is later. This requires that you review and update the information at least annually after the initial registration, and more frequently if required by changes in your information or another award term.

If you had an active registration in the CCR, you have an active registration in SAM.

B. Requirement for Data Universal Numbering System (DUNS) Numbers

If you are authorized to make subawards under this award, you:

1. Must notify potential subrecipients that no entity (see definition in paragraph C of this award term) may receive a subaward from you unless the entity has provided its DUNS number to you.
2. May not make a subaward to an entity unless the entity has provided its DUNS number to you.

C. Definitions

For purposes of this award term:

1. System for Award Management (SAM) means the Federal repository into which an entity must provide information required for the conduct of business as a recipient. Additional information about registration procedures may be found at the SAM Internet site (currently at <http://www.sam.gov>).
2. Data Universal Numbering System (DUNS) number means the nine-digit number established and assigned by Dun and Bradstreet, Inc. (D&B) to uniquely identify business entities. A DUNS number may be obtained from D&B by telephone (currently 866-705-5711) or the Internet (currently at <http://fedgov.dnb.com/webform>).
3. Entity, as it is used in this award term, means all of the following, as defined at 2 CFR part 25, subpart C:
 - a. A Governmental organization, which is a State, local government, or Indian Tribe;
 - b. A foreign public entity;
 - c. A domestic or foreign nonprofit organization;
 - d. A domestic or foreign for-profit organization; and
 - e. A Federal agency, but only as a subrecipient under an award or subaward to a non-Federal entity.
4. Subaward:
 - a. This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which you received this award and that you as the recipient award to an eligible subrecipient.
 - b. The term does not include your procurement of property and services needed to carry out the project or program (for further explanation, see Sec. __.210 of the attachment to OMB Circular A-133, Audits of States, Local Governments, and Non-Profit Organizations).
 - c. A subaward may be provided through any legal agreement, including an agreement that you consider a contract.
5. Subrecipient means an entity that:
 - a. Receives a subaward from you under this award; and
 - b. Is accountable to you for the use of the Federal funds provided by the subaward.

FA-TC-0065 LOBBYING RESTRICTIONS (MARCH 2012)

By accepting funds under this award, you agree that none of the funds obligated on the award shall be expended, directly or indirectly, to influence congressional action on any legislation or appropriation matters pending before Congress, other than to communicate to Members of Congress as described in 18 U.S.C. 1913. This restriction is in addition to those prescribed elsewhere in statute and regulation.

**FA-TC-0068.1 NONDISCLOSURE AND CONFIDENTIALITY AGREEMENTS ASSURANCES
(JUNE 2015)**

- (1) By entering into this agreement, the undersigned attests that the awardee listed in Block 5 of the Assistance Agreement **does not and will not** require its employees or contractors to sign internal nondisclosure or confidentiality agreements or statements prohibiting or otherwise restricting its employees or contractors from lawfully reporting waste, fraud, or abuse to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information.
- (2) The undersigned further attests that the awardee listed in Block 5 of the Assistance Agreement **does not and will not** use any Federal funds to implement or enforce any nondisclosure and/or confidentiality policy, form, or agreement it uses unless it contains the following provisions:
 - a. *“These provisions are consistent with and do not supersede, conflict with, or otherwise alter the employee obligations, rights, or liabilities created by existing statute or Executive order relating to (1) classified information, (2) communications to Congress, (3) the reporting to an Inspector General of a violation of any law, rule, or regulation, or mismanagement, a gross waste of funds, an abuse of authority, or a substantial and specific danger to public health or safety, or (4) any other whistleblower protection. The definitions, requirements, obligations, rights, sanctions, and liabilities created by controlling Executive orders and statutory provisions are incorporated into this agreement and are controlling.”*
 - b. The limitation above shall not contravene requirements applicable to Standard Form 312, Form 4414, or any other form issued by a Federal department or agency governing the nondisclosure of classified information.
 - c. Notwithstanding provision listed in paragraph (a), a nondisclosure or confidentiality policy form or agreement that is to be executed by a person connected with the conduct of an intelligence or intelligence-related activity, other than an employee or officer of the United States Government, may contain provisions appropriate to the particular activity for which such document is to be used. Such form or agreement shall, at a minimum, require that the person will not disclose any classified information received in the course of such activity unless specifically authorized to do so by the United States Government. Such nondisclosure or confidentiality forms shall also make it clear that they do not bar disclosures to Congress, or to an authorized official of an executive agency or the Department of Justice, that are essential to reporting a substantial violation of law.

**FA-TC-0070 REPORTING OF MATTERS RELATED TO RECIPIENT INTEGRITY AND
PERFORMANCE (DECEMBER 2015)**

a. General Reporting Requirement

If the total value of your currently active grants, cooperative agreements, and procurement contracts from all Federal awarding agencies exceeds \$10,000,000 for any period of time during the period of performance of this Federal award, then you as the recipient during that period of time must maintain the currency of information reported to the System for Award Management (SAM) that is made available in the designated integrity and performance system (currently the Federal Awardee Performance and Integrity Information System (FAPIIS)) about civil, criminal, or administrative proceedings described in paragraph 2 of this award term and condition. This is a statutory requirement under section 872 of Public Law 110-417, as amended (41 U.S.C. 2313). As required by section 3010 of Public Law 111-212, all information posted in the designated integrity and performance system on or after April 15, 2011, except past performance reviews required for Federal procurement contracts, will be publicly available.

b. Proceedings About Which You Must Report

Submit the information required about each proceeding that:

1. Is in connection with the award or performance of a grant, cooperative agreement, or procurement contract from the Federal Government;
2. Reached its final disposition during the most recent five year period; and

3. Is one of the following:
 - (A) criminal proceeding that resulted in a conviction, as defined in paragraph 5 of this award term and condition;
 - (B) A civil proceeding that resulted in a finding of fault and liability and payment of a monetary fine, penalty, reimbursement, restitution, or damages of \$5,000 or more;
 - (C) An administrative proceeding, as defined in paragraph 5. of this award term and condition, that resulted in a finding of fault and liability and your payment of either a monetary fine or penalty of \$5,000 or more or reimbursement, restitution, or damages in excess of \$100,000; or
 - (D) Any other criminal, civil, or administrative proceeding if:
 - (i) It could have led to an outcome described in paragraph 2.c.(1), (2), or (3) of this award term and condition;
 - (ii) It had a different disposition arrived at by consent or compromise with an acknowledgment of fault on your part; and
 - (iii) The requirement in this award term and condition to disclose information about the proceeding does not conflict with applicable laws and regulations.

c. Reporting Procedures

Enter in the SAM Entity Management area the information that SAM requires about each proceeding described in paragraph 2 of this award term and condition. You do not need to submit the information a second time under assistance awards that you received if you already provided the information through SAM because you were required to do so under Federal procurement contracts that you were awarded.

d. Reporting Frequency

During any period of time when you are subject to the requirement in paragraph 1 of this award term and condition, you must report proceedings information through SAM for the most recent five year period, either to report new information about any proceeding(s) that you have not reported previously or affirm that there is no new information to report. Recipients that have Federal contract, grant, and cooperative agreement awards with a cumulative total value greater than \$10,000,000 must disclose semiannually any information about the criminal, civil, and administrative proceedings.

e. Definitions

For purposes of this award term and condition:

1. Administrative proceeding means a non-judicial process that is adjudicatory in nature in order to make a determination of fault or liability (*e.g.*, Securities and Exchange Commission Administrative proceedings, Civilian Board of Contract Appeals proceedings, and Armed Services Board of Contract Appeals proceedings). This includes proceedings at the Federal and State level but only in connection with performance of a Federal contract or grant. It does not include audits, site visits, corrective plans, or A. Reporting of Matters Related to Recipient Integrity and Performance.
2. Conviction, for purposes of this award term and condition, means a judgment or conviction of a criminal offense by any court of competent jurisdiction, whether entered upon a verdict or a plea, and includes a conviction entered upon a plea of *nolo contendere*.
3. Total value of currently active grants, cooperative agreements, and procurement contracts includes—
 - (A) Only the Federal share of the funding under any Federal award with a recipient cost share or match; and
 - (B) The value of all expected funding increments under a Federal award and options, even if not yet exercised.

FA-TC-0072-CH PROMOTING FREE SPEECH AND RELIGIOUS LIBERTY

States, local governments, or other public entities may not condition sub-awards in a manner that would discriminate, or disadvantage sub-recipients based on their religious character.

**U.S. Department of Energy
FEDERAL ASSISTANCE REPORTING CHECKLIST
AND INSTRUCTIONS**

1. Identification Number: DE-SC0022198	2. Program/Project Title: Real-time dynamics of driven correlated electrons in quantum materials																																																									
3. Recipient: Regents of the University of California, Santa Barbara																																																										
4. Reporting Requirements: A. MANAGEMENT REPORTING <input checked="" type="checkbox"/> Research Performance Progress Report (RPPR) (RD&D Projects) <input type="checkbox"/> Progress Report (Non-RD&D Projects) <input checked="" type="checkbox"/> Special Status Report B. SCIENTIFIC/TECHNICAL REPORTING (Dissemination of results is required for RD&D projects. Reports & other S&T publications/products must be submitted using the appropriate DOE Announcement Notice (AN) located at: https://www.osti.gov/elink) <table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left;"><u>Product</u></th> <th style="text-align: left;"><u>Announcement Notice (AN)</u></th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/> Scientific & Technical Reporting Product</td> <td></td> </tr> <tr> <td> A. Journal Article-Accepted Manuscript</td> <td>DOE AN 241.3</td> </tr> <tr> <td> B. 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OTHER REPORTING <input checked="" type="checkbox"/> Annual Indirect Cost Proposal <input type="checkbox"/> Audit of For-Profit Recipients <input checked="" type="checkbox"/> SF-428 Tangible Personal Property Report Forms Family <input checked="" type="checkbox"/> Other (see special instructions) <input checked="" type="checkbox"/> Subject Invention Reporting and Patent Reporting	<u>Product</u>	<u>Announcement Notice (AN)</u>	<input checked="" type="checkbox"/> Scientific & Technical Reporting Product		A. Journal Article-Accepted Manuscript	DOE AN 241.3	B. Scientific/Technical Conference Paper/Presentation or Proceedings	DOE AN 241.3	C. Scientific/Technical Software & Manual	DOE AN 241.4	D. 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5. Special Instructions:

Notes:

- a. Progress Reports and Renewal Applications: Progress Reports must be submitted 90 days prior to the anticipated continuation funding date. Renewal applications must be submitted no later than six months prior to the scheduled expiration of the project period and must include a separate section that describes the results of work accomplished through the date of the renewal application (see 10 CFR 605.9). Renewal applications shall be submitted electronically through Grants.gov at <http://www.grants.gov>.
- b. Scientific & Technical Reporting Products: See Section B., SCIENTIFIC/TECHNICAL REPORTING, of the Federal Assistance Reporting Instructions, for submission instructions specific to each type of required scientific/technical deliverable.
- c. Final Scientific/Technical Report: For research awards subject to the Federal-Wide Research Terms and Conditions and DOE Agency-Specific Requirements, the Final/Scientific Report must be submitted no later than 120 calendar days after the end date of the period of performance.
- d. Federal Financial Report: Quarterly and Final Federal Financial Reports (FFRs) must be submitted to the U.S. Department of Energy, Office of Science-Integrated Support Center-Chicago (ISC-Chicago), Accounting and Finance, at the E-mail address listed and should only include financial information for awards issued by the ISC-Chicago. Final FFRs must also be submitted through Fedconnect. The FFR and instructions may be found at the web address included in Section C., Financial Reporting, of the attached instructions. After submitting a Final FFR for an individual award, do not continue to report the award on subsequent FFR submissions unless a correction is required. For research awards subject to the Federal-Wide Research Terms and Conditions and DOE Agency-Specific Requirements, the Final FFR must be submitted no later than 120 calendar days after the end date of the period of performance.
- e. Closeout Reporting: For research awards subject to the Federal-Wide Research Terms and Conditions and DOE Agency-Specific Requirements, closeout reports, such as the Patent Certification and Final Property Report, must be submitted no later than 120 calendar days after the end date of the period of performance.
- f. SF-428: See Section E. OTHER REPORTING, SF-428 Tangible Personal Property Report Forms Family, of the Federal Assistance Reporting Instructions, for specific guidance and submission schedules.
- g. Subject Invention Reporting and Patent Reporting: All subject inventions must be reported through the Interagency Edison (iEdison) system at www.iEdison.gov within two (2) months after the inventor discloses it in writing to Recipient personnel responsible for the administration of patent matters or six (6) months after conception or first actual reduction to practice, depending on the terms of the award. The Recipient must promptly report through iEdison, the acceptance of any manuscript describing a subject invention for publication or of any on sale or public use planned for the invention. Additionally, all invention reporting, including, but not limited to, decisions whether to elect title to subject inventions, reporting of all patent applications filed on subject inventions, confirmatory license submissions, etc. must be reported through iEdison. Failure to comply with the subject invention reporting requirements may result in a loss of rights, including, but not limited to, forfeiture of patent rights. For assistance with iEdison, please contact the iEdison Help Desk at (301) 435-1986 or email edison@od.nih.gov. All questions regarding the patent and data provisions should be directed to Intellectual Property Law Division, Chicago Office, at (630) 252-2171 or Chicago-IP@science.doe.gov.

FOR USE WITH 10 CFR PART 605 AWARDS (EXCEPT CONFERENCES)

MAY 2019

Federal Assistance Reporting Instructions

A. MANAGEMENT REPORTING

For awards involving RD&D a Research Performance Progress Report is required to be submitted. For all other awards a Progress Report is required to be submitted.

Either the Research Performance Progress Report (RPPR) or the Progress Report must be checked, but not both.

Research Performance Progress Report (RPPR) (RD&D Projects)

See the attachment entitled “Research Performance Progress Report” for instructions on what the Recipient is to include in the RPPR.

Progress Report (Non-RD&D Projects)

The Recipient must provide a concise narrative assessment of the status of work and include the following information and any other information identified under Special Instructions on the Federal Assistance Reporting Checklist:

1. The DOE award and report information:
 - a. The DOE Award Number (as it appears on the award face page)
 - b. Recipient Name (as it appears on the award face page)
 - c. Project Title
 - d. PD/PI Name, Title and Contact Information (e-mail address and phone number)
 - e. Name of Submitting Official, Title, and Contact Information (e-mail address and phone number), if other than PD/PI
 - f. Project Period (Start Date, End Date)
 - g. Report Submission Date
 - h. Reporting Period Start and End Date
2. A written comparison of the actual project accomplishments with the project goals and objectives established for the reporting period; if goals and/or objectives for the reporting period were not met, a detailed description of the variance shall be provided.
3. A discussion of what was accomplished under these goals and objectives established for this reporting period, including major activities, significant results, major findings or conclusions, key outcomes or other achievements. This section should not contain any proprietary data or other information not subject to public release. If such information is important to reporting progress, do not include the information, but include a note in the report advising the reader to contact the Principal Investigator or the Project Director for further information.
4. Cost Status. A comparison of the approved budget by budget period and the actual costs incurred during the reporting period shall be provided. If cost sharing is required, the cost breakdown shall show the DOE share, recipient share, and total costs.

5. Schedule Status. List milestones, anticipated completion dates and actual completion dates. If you submitted a project management plan with your application, you must use this plan to report schedule and budget variances. You may use your own project management system to provide this information.
6. Describe any changes during the reporting period in project approach and the reasons for these changes. Remember, significant changes to the project objectives and scope require prior approval by the Contracting Officer.
7. Describe any actual or anticipated problems or delays and any actions taken or planned to resolve them.
8. Describe any absence or changes of key personnel or changes in consortium/teaming arrangement during the reporting period.
9. List and describe any product produced or technology transfer activities accomplished during this reporting period, such as:
 - a. Publications (list journal name, volume, issue); conference papers; or other public releases of results. Attach or send copies of public releases to the DOE Program Manager identified in Block 15 of the Assistance Agreement Cover Page.
 - b. Web site or other Internet sites (list the URL) that reflect the results of this project.
 - c. Networks or collaborations fostered.
 - d. Technologies/Techniques (Identify and Describe).
 - e. Inventions/Patent Applications (Identify and Describe with date of application)
 - f. Other products, such as data or databases, physical collections, audio or video, software or NetWare, models, educational aid or curricula, instruments or equipment (Identify and Describe).

Special Status Report

The recipient must report the following events by e-mail as soon as possible after they occur:

1. Developments that have a significant favorable impact on the project.
2. Problems, delays, or adverse conditions which materially impair the recipient's ability to meet the objectives of the award or which may require DOE to respond to questions relating to such events from the public. The recipient must report any of the following incidents and include the anticipated impact and remedial action to be taken to correct or resolve the problem/condition:
 - a. Any single fatality or injuries requiring hospitalization of five or more individuals.
 - b. Any significant environmental permit violation.
 - c. Any verbal or written Notice of Violation of any Environmental, Safety, and Health statutes.
 - d. Any incident which causes a significant process or hazard control system failure.

- e. Any event which is anticipated to cause a significant schedule slippage or cost increase.
- f. Any damage to Government-owned equipment in excess of \$50,000.
- g. Any other incident that has the potential for high visibility in the media.

B. SCIENTIFIC/TECHNICAL REPORTING

The dissemination of scientific and technical information (STI) ensures public access to the results of federally funded research. STI refers to information products in any medium or format used to convey results, findings, or technical innovations from research and development or other scientific and technological work that are prepared with the intention of being preserved and disseminated in the broadest sense applicable (i.e., to the public or, in the case of controlled unclassified information or classified information, disseminated among authorized individuals). Access to and archival of DOE-funded STI are managed by the DOE Office of Scientific and Technical Information (OSTI). For information about OSTI see <http://www.osti.gov>.

For more information on STI submittals, see <http://www.osti.gov/stip/submittal>.

By properly notifying DOE OSTI about the published results, the information will be made publicly accessible and discoverable through DOE web-based products.

NOTE: SCIENTIFIC/TECHNICAL PRODUCTS INTENDED FOR PUBLIC RELEASE MUST NOT CONTAIN PROTECTED PERSONALLY IDENTIFIABLE INFORMATION (PII). PII is defined as any information about an individual which can be used to distinguish or trace an individual's identity. Some information that is considered to be PII is available in *public* sources such as telephone books, public websites, university listings, etc. This type of information is considered to be Public PII and includes, for example, first and last name, address, work telephone number, e-mail address, home telephone number, and general educational credentials. In contrast, *Protected* PII is defined as an individual's first name or first initial and last name in combination with any one or more of the following types of information: social security number, passport number, credit card numbers, clearances, bank numbers, biometrics, date and place of birth, mother's maiden name, criminal, medical and financial records, educational transcripts, etc., which could be mis-used if made publicly available.

1. Scientific and Technical Reporting Products

a. Journal Article-Accepted Manuscript

Recipients are encouraged to publish their work in scholarly journals. When/if a recipient has an article accepted for publication in a peer-reviewed journal they are required to announce the publication to OSTI as detailed below. This Reporting Requirement will be denoted with the Frequency "O – Other" on the Checklist.

Public access to peer-reviewed scholarly publications can be achieved by following these instructions. If the Recipient has a journal article accepted for publication which contains information/data produced under the award, then the Recipient must submit an AN 241.3 for the author's full-text version of the accepted manuscript, as described below, at the time the article meets the status of being "accepted" for publication. The

Federal Government's right to use the data produced under a Federal award is established in 2 CFR 200.315(d), U.S. Government's retained license to published results of federally funded research.

Content. The Recipient is to announce to DOE the final peer-reviewed accepted manuscript (AM), i.e., the version of the journal article content that has been peer reviewed and accepted for publication in a journal, by providing a persistent link to the accepted manuscript on the recipient's publicly accessible institutional repository or submitting the full text (see Electronic Submission Process below). The Recipient should NOT submit the journal's published version of the article, i.e., the Recipient should NOT submit a copyrighted reprint. The Recipient should not submit the content of peer reviews or a commitment to publish. The Recipient should provide only the accepted manuscript content intended to be the published article.

DOE will make no additional review of the content of an AM because the AM is a version of the journal article with the content to be published (i.e., publicly released) by the journal publisher. The Recipient is responsible for ensuring the suitability of the content for public release. The terms and conditions of award provide that PII, proprietary, export control or classified information shall be protected. DOE may choose to defer providing public access until an administrative interval period has passed.

The Recipient must self-certify at the time of submission to DOE via E-Link that the content is appropriate and that it is not a copyrighted reprint, i.e., the final version of the published article. Recipients are reminded that the article is to include an acknowledgement of Federal support and a disclaimer.

Electronic Submission Process. The Journal Article-Accepted Manuscript must be announced via the DOE Energy Link System (E-Link) by submitting a completed DOE Announcement Notice (AN) 241.3 (<https://www.osti.gov/mlink-2413>).

Within the AN 241.3, provide relevant journal information (article title, journal name, volume, issue, and any other pertinent publication information). Also provide a persistent link to the repository location of the accepted manuscript. An example of an acceptable persistent link is a URL to the specific location of the Journal Article-Accepted Manuscript hosted on a public, openly accessible university research publications website. If a persistent link is not available or if the website has access restrictions (preventing public access), then the Recipient must upload the full-text of the Accepted Manuscript using the AN 241.3 and E-Link instructions.

Full-text of accepted manuscripts must be in Adobe Portable Document Format (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Please refer to <http://www.osti.gov/stip/best-practices-portable-document-format-pdf-creation> for PDF document creation.

b. **Scientific/Technical Conference Paper/Presentation or Proceedings**

Recipients are encouraged to announce Scientific and Technical Conference Papers/Presentations if they are the primary means by which certain research results are disseminated or if they contain research results not already announced to DOE by the Recipient in technical reports, accepted journal articles, or other STI. This Reporting Requirement will be denoted with the Frequency "O – Other" on the Checklist. Instructions for how to announce such STI can be found below. In cases

where the Recipient is required to create and submit a Conference Proceedings, the Frequency will be “F – Final.”

Content. The content should include: (1) Name of conference; (2) Location of conference; (3) Date of conference; and (4) Conference sponsor. Also include an acknowledgement of Federal support and a disclaimer.

Electronic Submission Process. Scientific/technical conference papers/presentations or proceedings must be submitted via the DOE Energy Link System (E-Link) with a completed DOE Announcement Notice (AN) 241.3 (<https://www.osti.gov/mlink-2413>).

DOE will not review conference papers or presentations prior to making publicly available via OSTI since they were already presented in a public setting during a conference. The Recipient is responsible for ensuring the suitability of the content for public release. The terms and conditions of award provide that PII, proprietary, export control or classified information shall be protected. The Recipient must self-certify at the time of submission to DOE via E-Link that the content is appropriate for and has been publicly released.

Scientific/technical conference papers or proceedings that are textual documents must be submitted in Adobe Portable Document Format (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Please refer to <http://www.osti.gov/stip/best-practices-portable-document-format-pdf-creation> for PDF document creation. Audiovisual formats, such as PowerPoint (PPT) or video presentations, may be submitted as a Microsoft PPT file or audiovisual file by selecting the appropriate format on the AN 241.3 for the file to be uploaded or, in the case of videos posted on a publicly available website, by providing a link to the specific video. Format options and other instructions can be found at <http://www.osti.gov/stip/audiovisualsti>.

c. Scientific/Technical Software & Manual

Content. When a Recipient submits software to OSTI for dissemination, the following must be delivered: source code, the executable object code and the minimum support documentation needed by a competent user to understand and use the software and to be able to modify the software in subsequent development efforts, unless otherwise specified in the award.

Submission Process. The software submission must be accompanied by a completed DOE Announcement Notice (AN) 241.4 “Announcement of U.S. Department of Energy Computer Software.” The announcement notice and instructions are available on E-Link at <http://www.osti.gov/estsc/241-4.jsp>. The AN 241.4 may be filled online and submitted electronically, with a printed copy or note accompanying the shipped software package.

Software (including user guide or manual) must be submitted on computer disk (CD) shipped via regular mail to:

Energy Science and Technology Software Center
P.O. Box 1020
Oak Ridge, TN 37831

d. Other STI

Recipients are encouraged to announce other forms of STI especially if they are the primary means by which certain research results are disseminated or if they contain research results not already announced to DOE by the Recipient in technical reports, accepted journal articles, or other STI. This Reporting Requirement will be denoted with the Frequency “O – Other” on the Checklist.

Other types of STI produced which may be used for public dissemination of project results include: dissertation/thesis, patent, book, or other similar products. These types of STI may also be announced using DOE AN 241.3 by following instructions on the E-Link website (<http://www.osti.gov/elink-2413>).

2. Final Scientific/Technical Report

For R&D type awards where a Final Scientific/Technical Report is required, recipients are required to create and submit a final technical report. This Reporting Requirement will be denoted with the Frequency “F – Final” on the Federal Assistance Reporting Checklist.

The scientific/technical report is intended to increase the diffusion of knowledge gained by DOE-funded research, and all requirements shall be interpreted in that light.

Content. Research findings and other significant STI resulting from the DOE-sponsored R&D project shall be included in the final scientific/technical report, subject to the following provisions:

1. The scientific/technical report is to cover the entire project period. For Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards, a final scientific/technical report must be submitted after the completion of each phase, e.g., Phase I, Phase II, and sequential Phase II, as described in the Special Instructions.
2. STI that is publicly accessible need not be duplicated in the report if a citation with a link to where the information may be found is included in the report. For example, articles found in PAGES (i.e., DOE’s Public Access Gateway for Energy and Science, <http://www.osti.gov/pages/>) are accessible to the public.
3. Provide identifying information: the DOE award number; sponsoring program office; name of recipient; project title; name of project director/principal investigator; and consortium/teaming members.
4. Include an acknowledgment of Federal support and a disclaimer, which must appear in the publication of any material as noted in the terms and conditions.
5. Include any limitations on public release of the report, if applicable. If the document being submitted contains patentable material or protected data (i.e., data first produced in the performance of the award that is protected from public release for a period of time by terms of the award agreement, e.g., SBIR protected data), then (1) prominently display on the cover of the report any authorized distribution limitation notices, such as patentable material or protected data (e.g., SBIR protected data) and (2) clearly identify patentable or protected data on each page of the report. Reports delivered without such notices may be deemed to have been furnished with unlimited rights, and the Government assumes no liability for the disclosure, use or reproduction of such reports. Any restrictive markings must also be noted in the distribution limitation section of the Announcement Notice (AN)

241.3 (see Electronic Submission Process, below). No protected PII should be included (see PII definition).

6. Provide an abstract or executive summary, which should be a minimum of one paragraph and written in terms understandable by an educated layperson. (Refer to <http://www.osti.gov/stip/standards> for ANSI/NISO guidance as needed.) The abstract included in an application may serve as a model for this.
7. Summarize project activities for the entire period of funding, including original hypotheses, approaches used, and findings. Include, if applicable, facts, figures, analyses, and assumptions used during the life of the project to support the results in a manner that conveys to the scientific community the STI created during the project. To minimize duplication, the report may reference STI, including journal articles, that is publicly accessible. See also #2.
8. For guidance offered by the National Information Standards Organization on typical attributes and content of a technical report, if needed, refer to ANSI/NISO Z39.18-2005 (R2010), Scientific and Technical Reports – Preparation, Presentation, and Preservation (see <http://www.osti.gov/stip/standards>).

Electronic Submission Process. The final scientific/technical report must be submitted via the DOE Energy Link System (E-Link) with a completed electronic version of DOE Announcement Notice (AN) 241.3, “U.S. Department of Energy (DOE), Announcement of Scientific and Technical Information (STI).” The Recipient can complete, upload, and submit the DOE AN 241.3 online via E-Link (<https://www.osti.gov/elink-2413>).

The Recipient must mark the appropriate block in the “Intellectual Property/Distribution Limitations” Section of the DOE AN 241.3. Reports that are electronically uploaded must not contain any limited rights data (proprietary data), classified information, protected PII, information subject to export control classification, or other information not subject to release. During the upload process, the Recipient must self-certify that no content of this nature is being submitted. For assistance with reports containing such content, contact the Contracting Officer.

Text documents must be submitted in Adobe Portable Document Format (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Please refer to <http://www.osti.gov/stip/best-practices-portable-document-format-pdf-creation> for PDF document creation.

C. FINANCIAL REPORTING

The Recipient must complete the SF-425 as identified on the Reporting Checklist in accordance with the report instructions. A fillable version of the form is available at <https://www.grants.gov/web/grants/forms/post-award-reporting-forms.html>

D. CLOSEOUT REPORTS

Final Invention and Patent Report

The Recipient must provide a DOE Form 2050.11, “PATENT CERTIFICATION.” This form is available at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms> under Reporting Forms.

Final Property Report

See Instructions under **SF-428 Tangible Personal Property Report Forms Family** below.

E. OTHER REPORTING

Annual Indirect Cost Proposal and Reconciliation

Requirement. In accordance with the applicable cost principles, the recipient must submit an annual indirect cost proposal, reconciled to its financial statements, within six months after the close of the recipient's fiscal year, unless the award is based on a predetermined or fixed indirect rate(s), or a fixed amount for indirect or facilities and administration (F&A) costs. The format and content of the indirect cost proposal should follow the Defense Contract Audit Agency's (DCAA) ICE Model in order to be considered an adequate proposal. DCAA's ICE Model can be found on the DCAA website at: http://www.dcaa.mil/ice_model.html .

Cognizant Agency. The Recipient must submit its annual indirect cost proposal directly to the cognizant agency for negotiating and approving its indirect costs. If the DOE awarding office is the cognizant agency, the Recipient must submit their annual indirect cost proposal to <https://www.fedconnect.net/fedconnect/default.aspx>

Audit of For-Profit Recipients

As required by 2 CFR parts 910.500 through 910.521, a For-Profit entity which expends \$750,000 or more during their fiscal year in DOE awards must have a compliance audit conducted for that year.

Submission: The compliance audit report(s) must be submitted to DOE within the earlier of 30 days after receipt of the auditor's report(s) or nine months after the end of the audit period (Recipient's fiscal year-end).. The compliance audit report must be submitted, along with audited financial statements (if applicable), to the appropriate DOE Contracting Officer at <https://www.fedconnect.net/fedconnect/default.aspx> as well as to the DOE Office of the Chief Financial Officer (CFO) at DOE-Audit-Submission@hq.doe.gov .

SF-428 Tangible Personal Property Report Forms Family

Requirement. The SF-428 is a forms family consisting of 5 forms: the SF-428, SF-428-A, SF-428-B, SF-428-C and SF-428S. Fillable versions of the SF-428 forms are **temporarily** available at https://www.reginfo.gov/public/do/PRAViewIC?ref_nbr=201002-3090-001&icID=192059. The SF-428 is the cover page and the submitter attaches the appropriate form or forms as listed on the SF-428.

- The SF-428A is the Annual report, due Oct 30th of each calendar year.
- The SF-428B is the Final Award Closeout Report, due 90 calendar days after completion or termination of the award.
- The SF-428C is the Disposition Report/Request.
- The SF-428S is the supplemental form for the SF-428-A, SF-428-B, and SF-428-C.

If at any time during the award the Recipient is provided Government-furnished property or acquires property with project funds and the award specifies that the property vests in the Federal Government (i.e. federally owned property), the Recipient must submit an annual inventory of this property to the DOE Administrator using the SF-428 and SF-428-A forms at the address on page 1 of this checklist **no later than October 30th of each calendar year**, to cover an annual reporting period ending on the preceding September 30th. The SF-428 and SF-428-B reports are required 90 calendar days after completion or termination of award to complete the closeout process.

Content of Inventory. As required on the SF-428-A and SF-428-S forms, the inventory must include a description of the property, tag number, acquisition date, and acquisition cost, if purchased with project funds. The location of property should be listed under the Comments section. The report must list all federally owned property, including property located at subcontractor's facilities or other locations.

RESEARCH PERFORMANCE PROGRESS REPORT

Standard Cover Page Data Elements and Reporting Categories

The standard cover page data elements shown below, as well as mandatory and optional components comprise the complete research performance progress report format. Each category in the RPPR is a separate reporting component. Each component is marked to indicate if it is optional or mandatory. Mandatory components must be addressed in each report, optional are at your discretion. For Optional components, if you have nothing significant to report during the reporting period on a question or item, state "Nothing to Report," if there are reportable items, please submit according to the instructions for each section. Onscreen instructions for completing the report are provided in the Portfolio Analysis and Management System (PAMS). Major sections of the progress report, marked here with Roman Numerals, are separate pages inside the PAMS system. Each section must be marked as complete in PAMS before the report can be submitted to DOE. For some sections, information provided in this progress report will be used to prepopulate the next progress report required for the award. Information from the Products section will prepopulate the Renewal Proposal Products section of future renewal proposals.

I. COVER PAGE DATA ELEMENTS: All fields except Recipient Award ID Number are prepopulated by PAMS

- a. Recipient Award Identification Number (an optional identifying number issued by the recipient and used for internal processing or reporting)
- b. Federal Agency and Organization Element to Which Report is Submitted (prepopulated)
- c. Federal Grant or Other Identifying Number Assigned by Agency (prepopulated)
- d. Project Title (prepopulated)
- e. PD/PI Name, Title and Contact Information (e-mail address and phone number) (prepopulated)
- f. Name of Submitting Official, Title, and Contact Information (e-mail address and phone number), if other than PD/PI (prepopulated)
- g. Submission Date (prepopulated)
- h. DUNS Number (prepopulated)
- i. Recipient Organization (Name and Address) (prepopulated)
- j. Project/Grant Period (Start Date, End Date) (prepopulated)
- k. Reporting Period End Date (prepopulated)
- l. Report Term or Frequency (annual, semi-annual, quarterly, final, other) (prepopulated)

II. ACCOMPLISHMENTS: Mandatory

What was done? What was learned?

The information provided in this section allows the agency to assess whether satisfactory progress has been made during the reporting period. The PI is reminded that the grantee is required to obtain prior written approval from the Contracting Officer whenever there are significant changes in the project or its direction. Requests for prior written approval must be submitted to the Contracting Officer.

a. What are the major goals and objectives of this project?

List the major goals of the project as stated in the approved application or as approved by the agency. Describe the proposed technical approach to obtain those goals. If the application lists milestones/target dates for important activities or phases of the project, identify these dates and show actual completion dates or the percentage of completion. Generally, the goals will not change from one reporting period to the next. However, if the awarding agency approved changes to the goals during the reporting period, list the revised goals and objectives. Also explain any significant changes in approach or methods from the agency approved application or plan.

b. What was accomplished under these goals?

For this reporting period describe: 1) major activities; 2) specific objectives; 3) significant results or key outcomes, including major findings, developments, or conclusions (both positive and negative); and/or 4) other achievements. Include a discussion of stated goals not met. As the project progresses, the emphasis in reporting in this section should shift from reporting activities to reporting accomplishments.

c. What opportunities for training and professional development has the project provided?

Describe opportunities for training and professional development provided to anyone who worked on the project or anyone who was involved in the activities supported by the project. "Training" activities are those in which individuals with advanced professional skills and experience assist others in attaining greater proficiency. Training activities may include, for example, courses or one-on-one work with a mentor. "Professional development" activities result in increased knowledge or skill in one's area of expertise and may include workshops, conferences, seminars, study groups, and individual study. Include participation in conferences, workshops, and seminars not listed under major activities.

If the project was not intended to provide training and professional development opportunities or there is nothing significant to report during this reporting period, state "Nothing to Report."

d. How have the results been disseminated to communities of interest?

Describe how the results have been disseminated to communities of interest. Include any outreach activities that have been undertaken to reach members of communities who are not usually aware of these research activities, for the purpose of enhancing public understanding and increasing interest in learning and careers in science, technology, and the humanities.

If there is nothing significant to report during this reporting period, state "Nothing to Report."

e. What do you plan to do during the next reporting period to accomplish the goals and objectives?

Describe briefly what you plan to do during the next reporting period to accomplish the goals and objectives.

If there are no changes to the agency-approved application or plan for this project or if this is the final report, state "Nothing to Report."

III. PRODUCTS: MANDATORY, if Products Exist

What has the project produced?

Publications are the characteristic product of research. Agencies evaluate what the publications demonstrate about the excellence and significance of the research and the efficacy with which the results are being communicated to colleagues, potential users, and the public, not the number of publications. Many projects (though not all) develop significant products other than publications. Agencies assess and report both publications and other products to Congress, communities of interest, and the public.

List any products resulting from the project during the reporting period. Examples of products include: publications, conference papers, and presentations; website(s) or other Internet site(s); technologies or techniques; inventions, patent applications, and/or licenses; and other products, such as data or databases, physical collections, audio or video products, software or NetWare, models, educational aids or curricula, instruments or equipment, research material, interventions (e.g., clinical or educational), new business creation or any other public release of information related to the project.

If there is nothing significant to report during this reporting period, state "Nothing to Report."

a. Publications, conference papers, and presentations

Report only the major publication(s) resulting from the work under this award. There is no restriction on the number. However, Agencies are interested in only those publications that most reflect the work under this award in the following categories:

- i. **Journal publications.** List peer-reviewed articles or papers appearing in scientific, technical, or professional journals. Include any peer-reviewed publication in the periodically published proceedings of a scientific society, a conference, or the like. A publication in the proceedings of a one-time conference, not part of a series, should be reported under "Books or other non-periodical, one-time publications."

Identify for each publication: Author(s); title; journal; volume: year; page numbers; status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no). Also see instructions under **B. Scientific/Technical Reporting** regarding the submission of accepted manuscripts and other STI as appropriate.

- ii. **Books or other non-periodical, one-time publications.** Report any book, monograph, dissertation, abstract, or the like published as or in a separate publication, rather than a periodical or series. Include any significant publication in the proceedings of a one-time conference or in the report of a one-time study, commission, or the like. Identify for each one-time publication: author(s); title; editor; title of collection, if applicable; bibliographic information; year; type of publication (book, thesis or dissertation, other); status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no).
- iii. **Other publications, conference papers and presentations.** Identify any other publications, conference papers and/or presentations not reported above. Specify the status of the publication as noted above.

b. Website(s) or other Internet site(s)

List the URL for any Internet site(s) that disseminates the results of the research activities. A short description of each site should be provided. It is not necessary to include the publications already specified above in this section.

c. Technologies or techniques

Identify technologies or techniques that have resulted from the research activities. Describe the technologies or techniques and how they are being shared.

d. Inventions, patent applications, and/or licenses

Identify inventions, patent applications with date, and/or licenses that have resulted from the research. Submission of this information as part of an interim or final Research Performance Progress Report is not a substitute for any other invention reporting required under the terms and conditions of an award.

e. Other products

Identify any other significant products that were developed under this project. Describe the product and how it is being shared. Examples of other products are: Data or databases; Physical collections; Audio or video products; Software or NetWare; Models; Educational aids or curricula; Instruments or equipment; Research material (e.g., germplasm, cell lines, DNA probes, animal models); Interventions (e.g. clinical, educational); new business creation; and Other.

IV. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS: MANDATORY

Who has been involved?

Agencies need to know who has worked on the project to gauge and report performance in promoting partnerships and collaborations. The following information on participants and other collaborating organizations during this reporting period must be provided:

1. Participants

What individuals have worked on the project?

Provide the following information for: (1) Project director(s)/Principal investigator(s) (PDs/PIs); and (2) each person who has worked, and was funded by the project, at least one person month per year on the project during the reporting period, regardless of the source of compensation (a person month equals approximately 160 hours of effort). Please note that such reporting does not constitute a formal institutional report of effort on the project, but rather is used by agency program staff to evaluate the progress of the project during a given reporting period.

Provide the name and identify the role the person played in the project. Do NOT include any other identifying information on individuals. Indicate the nearest whole person month (Calendar, Academic, Summer) that the individual worked on the project. Show the most senior role in which the person has worked on the project for any significant length of time. For example, if an undergraduate student graduates, enters graduate school, and continues to work on the project, show that person as a graduate student, preferably explaining the change in involvement. Describe how this person contributed to the project and with what funding support. If information is unchanged from a previous submission, provide the name only and indicate "no change". Identify whether this person is collaborating internationally. Specifically is the person collaborating with an individual located in a foreign country and whether the person had traveled to the foreign country as part of that collaboration and duration of stay. The foreign country(ies) should be identified.

Example:

- 1) **Name:** Mary Smith
- 2) **Project Role:** Graduate Student
- 3) **Nearest person month worked:** 5
- 4) **Contribution to Project:** Ms. Smith has performed work in the area of combined error-control and constrained coding.
- 5) **Funding Support:** The Ford Foundation (Complete only if the funding provided from other than this award.)
- 6) **Collaborated with individual in foreign country:** Yes
- 7) **Country(ies) of foreign collaborator:** China
- 8) **Travelled to foreign country:** Yes
- 9) **If traveled to foreign country(ies), duration of stay:** 5 months

2. Partners

What other organizations have been involved as partners?

Describe partner organizations – academic institutions, other nonprofits, industrial or commercial firms, state or local governments, schools or school systems, or other organizations (foreign or domestic) – that have been involved with the project. Partner organizations may provide financial or in-kind support, supply facilities or equipment, collaborate in the research, exchange personnel, or otherwise contribute.

Provide the following information for each partnership:

1. Organization Name:
2. Location of Organization: (if foreign location list country)
3. Partner's contribution to the project: (identify one or more)
 - i. Financial support;
 - ii. In-kind support (e.g., partner makes software, computers, equipment, etc., available to project staff);
 - iii. Facilities (e.g., project staff use the partner's facilities for project activities);
 - iv. Collaborative research (e.g., partner's staff work with project staff on the project);
 - v. Personnel exchanges (e.g., project staff and/or partner's staff use each other's facilities, work at each other's site).
 - vi. Other
4. More detail on partner and contribution (foreign or domestic).

If there is nothing significant to report during this reporting period, state "Nothing to Report."

3. Other Collaborators

Have other collaborators or contacts been involved?

Some significant collaborators or contacts within the recipient's organization may not be covered by "What people have worked on the project?" Likewise, some significant collaborators or contacts outside the recipient's organization may not be covered under "What other organizations have been involved as partners?"

For example, describe any significant:

1. collaborations with others within the recipient's organization, especially interdepartmental or interdisciplinary collaborations;

2. collaborations or contact with others outside the organization; and
3. collaborations or contacts with others outside the United States or with an international organization.

Identify the state(s), U.S. territory(ies), or country(ies) of collaborations or contacts.

It is likely that many recipients will have no other collaborators or contacts to report.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

V. IMPACT: Optional (but strongly recommended)

What is the impact of the project? How has it contributed?

Over the years, this base of knowledge, techniques, people, and infrastructure is drawn upon again and again for application to commercial technology and the economy, to health and safety, to cost-efficient environmental protection, to the solution of social problems, to numerous other aspects of the public welfare, and to other fields of endeavor.

The taxpaying public and its representatives deserve a periodic assessment to show them how the investments they make benefit the nation. Through this reporting format, and especially this section, recipients provide that assessment and make the case for Federal funding of research and education.

Agencies use this information to assess how their research programs: increase the body of knowledge and techniques; enlarge the pool of people trained to develop that knowledge and techniques or put it to use; and improve the physical, institutional, and information resources that enable those people to get their training and perform their functions.

This component will be used to describe ways in which the work, findings, and specific products of the project have had an impact during this reporting period. Describe distinctive contributions, major accomplishments, innovations, successes, or any change in practice or behavior that has come about as a result of the project relative to: the development of the principal discipline(s) of the project; other disciplines; the development of human resources; teaching and educational experiences; physical, institutional, and information resources that form infrastructure; technology transfer (include transfer of results to entities in government or industry, adoption of new practices, or instances where research has led to the initiation of a startup company); society beyond science and technology; or foreign countries.

a. What was the impact on the development of the principal discipline(s) of the project?

Describe how findings, results, and techniques that were developed or extended, or other products from the project made an impact or are likely to make an impact on the base of knowledge, theory, and research and/or pedagogical methods in the principal disciplinary field(s) of the project. Summarize using language that a lay audience can understand (*Scientific American* style). How the field or discipline is defined is not as important as covering the impact the work has had on knowledge and technique. Make the best distinction possible, for example, by using a “field” or “discipline”, if appropriate, that corresponds with a single academic department (i.e., physics rather than nuclear physics).

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

b. What was the impact on other disciplines?

Describe how the findings, results, or techniques that were developed or improved, or other

products from the project made an impact or are likely to make an impact on other disciplines.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

c. What was the impact on the development of human resources?

Describe how the project made an impact or is likely to make an impact on human resource development in science, engineering, and technology. For example, how has the project: provided opportunities for research and teaching in the relevant fields; improved the performance, skills, or attitudes of members of underrepresented groups that will improve their access to or retention in research, teaching, or other related professions; developed and disseminated new educational materials; provided scholarships; or provided exposure to science and technology for practitioners, teachers, young people, or other members of the public?

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

d. What was the impact on physical, institutional, and information resources that form infrastructure?

Describe ways, if any, in which the project made an impact, or is likely to make an impact, on physical, institutional, and information resources that form infrastructure, including: physical resources such as facilities, laboratories, or instruments; institutional resources (such as establishment or sustenance of societies or organizations); or information resources, electronic means for accessing such resources or for scientific communication, or the like.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

e. What was the impact on technology transfer?

Describe ways in which the project made an impact, or is likely to make an impact, on commercial technology or public use, including: transfer of results to entities in government or industry; instances where the research has led to the initiation of a start-up company; or adoption of new practices.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

f. What was the impact on society beyond science and technology?

Describe how results from the project made an impact, or are likely to make an impact, beyond the bounds of science, engineering, and the academic world on areas such as: improving public knowledge, attitudes, skills, and abilities; changing behavior, practices, decision making, policies (including regulatory policies), or social actions; or improving social, economic, civic, or environmental conditions.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

g. What percentage of the award’s budget was spent in foreign country(ies)?

Describe what percentage of the award’s budget was spent in foreign country(ies). If more than one foreign country is involved, identify the distribution between the foreign countries.

U.S.-based recipients should provide the percentage of the budget spent in the foreign country(ies) and/or, if applicable, the percentage of the budget obligated to foreign entities as first-tier subawards.

Recipients that are not U.S.-based should provide the percentage of the direct award received, excluding all first-tier subawards to U.S. entities. If applicable, provide separately the percentage of the budget obligated to non-U.S. entities as first-tier subawards.

VI. CHANGES/PROBLEMS: Optional (but strongly encouraged); Carryover Amount Mandatory

The PD/PI is reminded that the grantee is required to obtain prior written approval from the Contracting Officer whenever there are significant changes in the project or its direction. Requests for prior written approval must be submitted to the Contracting Officer. If not previously reported in writing, provide the following additional information, if applicable: Changes in approach and reasons for change; Actual or anticipated problems or delays and actions or plans to resolve them; Changes that have a significant impact on expenditures; Significant changes in use or care of animals, human subjects, and/or biohazards.

a. Changes in approach and reasons for change

Describe any changes in approach during the reporting period and reasons for these changes. Remember that significant changes in objectives and scope require prior approval of the Contracting Officer.

b. Actual or anticipated problems or delays and actions or plans to resolve them

Describe problems or delays encountered during the reporting period and actions or plans to resolve them.

c. Changes that have a significant impact on expenditures

Describe changes during the reporting period that may have a significant impact on expenditures, for example, delays in hiring staff or favorable developments that enable meeting objectives at less cost than anticipated.

d. Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents

Describe significant deviations, unexpected outcomes, or changes in approved protocols for the use or care of human subjects, vertebrate animals, biohazards and/or select agents during the reporting period. If required, were these changes approved by the applicable institution committee and reported to the agency? Also specify the applicable Institutional Review Board/Institutional Animal Care and Use Committee approval dates.

e. Change of primary performance site location from that originally proposed

Identify any change to the primary performance site location identified in the proposal, as originally submitted.

f. Carryover Amount

Provide an estimate of the carryover amount expected at the reporting period end date.

VII. DEMOGRAPHIC INFORMATION: Mandatory (providing email addresses)

Provide email addresses for each participant listed in the participant section of this report. Once you submit this report, PAMS will send the participants not registered in PAMS an email inviting

them to register and complete their PAMS person profiles so that any demographic information provided can be collected. Entering demographic information is optional for participants. Demographics are collected for a variety of purposes, including the following:

- to gauge whether our programs and other opportunities are fairly reaching and benefiting everyone regardless of demographic category;
- to ensure that those in under-represented groups have the same knowledge of and access to programs, meetings, vacancies, and other research and educational opportunities as everyone else;
- to gauge and report performance in promoting partnerships and collaborations;
- to assess involvement of international investigators or students in work we support;
- to track the evolution of changing science, technology, engineering and mathematics (STEM) fields at different points in the pipeline (e.g., medicine and law demographics have recently changed dramatically);
- to raise investigator and agency staff awareness of the involvement of under-represented groups in research;
- to encourage the development of creative approaches for tapping into the full spectrum of talent of the STEM workforce;
- to respond to external requests for data of this nature from a variety of sources, including the National Academies, Congress, etc.; and
- to respond to legislatively-required analysis of workforce dynamics. Legislation requires at least one agency to routinely estimate scientific workforce needs. This analysis is accomplished through reviewing demographic data submitted for the existing workforce.

Demographic data (i.e., gender, ethnicity, race, and disability status) is provided directly by significant contributors with the understanding that submission of such data is voluntary. There are no adverse consequences if the data are not provided. Confidentiality of demographic data is in accordance with agency's policies and practices for complying with the requirements of the Privacy Act.

Gender: Male
 Female
 Do not wish to provide

Ethnicity: Hispanic or Latina/o
 Not-Hispanic or not-Latina/o
 Do not wish to provide

Race (select one or more): American Indian or Alaska Native
 Asian
 Black or African American
 Native Hawaiian or other Pacific Islander
 White
 Do not wish to provide

Disability Status:

Yes (check yes if any of the following apply to you)

- Deaf or serious difficulty hearing
- Blind or serious difficulty seeing even when wearing glasses
- Serious difficulty walking or climbing stairs
- Other serious disability related to a physical, mental, or emotional condition.

No

Do not wish to provide

This measure is designed as a binary measure; it encompasses all self-reported disabilities. Please do not use it to report the number of individuals who have different types of disabilities (e.g., hearing impairments).

Demographic data is only disclosed to the person providing the data: DOE can only access the data in aggregate form.

VIII. SPECIAL REPORTING REQUIREMENTS: Mandatory

Respond to any special reporting requirements specified in the award terms and conditions, as well as any award specific reporting requirements.

AWARD NO. DE-SC0022198

FINANCIAL ASSISTANCE INTELLECTUAL PROPERTY PROVISIONS

The intellectual property provisions applicable to this award are indicated with an “X” in the Table below.

Select One (X)	Type of Award	Type of Project	Special Data Statute e.g., EPACT)	Type of Recipient	Set Number (PDF)
	Cooperative Agreement	Research, Development, or Demonstration (RD&D)	No	Domestic Small Business	CSB-115
	Cooperative Agreement	RD&D	Yes	Domestic Small Business	CDSB-115
	Cooperative Agreement	RD&D	No	Large Business, State or Local Government, and Foreign Entity	CLB-115
	Cooperative Agreement	RD&D	Yes	Large Business, State or Local Government, and Foreign Entity	CDLB-115
	Grant	RD&D	No	Domestic Small Business	GSB-115
	Grant	RD&D	Yes	Domestic Small Business	GDSB-115
	Grant	RD&D	No	Large Business, State or Local Government, and Foreign Entity	GLB-115
	Grant	RD&D	Yes	Large Business, State or Local Government, and Foreign Entity	GDLB-115
X	Grant and Cooperative Agreement	RD&D	No	Domestic Nonprofit Organization	GNP-119
	Grant and Cooperative Agreement	Non RD&D	N/A	All types of recipients	NRD-115



Department of Energy
Office of Science • Integrated Support Center
Intellectual Property Law Division
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(630) 252-2171 Voice • (630) 252-2779 Fax
Chicago-ip@science.doe.gov
science.energy.gov/isc/services/legal/

SUBJECT: Invention Reporting and Patent Responsibility

The Intellectual Property Law Division, Chicago Office, is responsible for assisting you in fulfilling the patent provisions of your agreement, which covers all inventions first actually reduced to practice or conceived in the course of or under your agreement.

All subject inventions under your agreement must be reported through the Interagency Edison (iEdison) system at www.iEdison.gov within two (2) months after the inventor discloses the invention to you or six (6) months after conception or first actual reduction to practice, depending on the terms of your agreement. Additionally, through iEdison you are required to promptly notify our office of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned for the invention.

If the terms of your agreement allow for the retention of patent rights (e.g. small businesses, non-profit entities, or the grant of an applicable DOE Patent Waiver), an election decision electing title to the invention or waiving title to the Government must be provided through iEdison within two (2) years (small businesses or non-profit entities) or eight (8) months (all others entities) of reporting the invention in iEdison, but in any event, at least sixty (60) days prior to the end of the one year statutory period initiated by publication, on sale or public use. Thereafter, an initial patent application must be filed and reported through iEdison within one (1) year of electing title, or prior to the end of any statutory period wherein valid patent protection can be obtained, if earlier. Annual reports on the utilization of an elected invention or efforts at obtaining such utilization made by you or your licensees or assignees should also be submitted through iEdison, unless otherwise directed by DOE.

If your agreement requires prior DOE approval of publications (e.g. large businesses), our office should be contacted for assistance.

Failure to comply with the terms of your agreement may result in a loss of rights, including, but not limited to, forfeiture of patent rights. For assistance with iEdison, please contact the iEdison Help Desk at (301) 435-1986 or email edison@od.nih.gov. If you have any questions regarding the patent and data provisions of your agreement, please contact our office at (630) 252-2171 or Chicago-IP@science.doe.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Mike Dobbs", is written over a horizontal line.

Michael J. Dobbs
Deputy Chief Counsel
Intellectual Property Law Division