

## FDP Cost Reimbursement Subaward

**Federal Awarding Agency:**

Pass-Through Entity (PTE):	Subrecipient:
PTE PI:	Sub PI:
PTE Federal Award No:	Subaward No:
Project Title:	
Subaward Budget Period: Start: _____ End: _____	Amount Funded This Action (USD): \$ _____
Estimated Period of Performance: Start: _____ End: _____	Incrementally Estimated Total (USD): \$ _____

**Terms and Conditions**

1. PTE hereby awards a cost reimbursable subaward, (as determined by 2 CFR 200.331), to Subrecipient. The Statement of Work and budget for this Subaward are as shown in Attachment 5. In its performance of Subaward work, Subrecipient shall be an independent entity and not an employee or agent of PTE.
2. Subrecipient shall submit invoices not more often than monthly and not less frequently than quarterly for allowable costs incurred. Upon the receipt of proper invoices, the PTE agrees to process payments in accordance with this Subaward and 2 CFR 200.305. All invoices shall be submitted using Subrecipient's standard invoice, but at a minimum shall include current and cumulative costs (including cost sharing), breakdown by major cost category, Subaward number, and certification, as required in 2 CFR 200.415(a). Invoices that do not reference PTE Subaward number shall be returned to Subrecipient. Invoices and questions concerning invoice receipt or payments shall be directed to the party's Contact, shown in Attachment 3A.
3. A final statement of cumulative costs incurred, including cost sharing, marked "FINAL" must be submitted to PTE's Contact, as shown in Attachment 3A, not later than 30 days after The final statement of costs shall constitute Subrecipient's final financial report.
4. All payments shall be considered provisional and are subject to adjustment within the total estimated cost in the event such adjustment is necessary as a result of an adverse audit finding against the Subrecipient.
5. Matters concerning the technical performance of this Subaward shall be directed to the appropriate party's Principal Investigator as shown in Attachments 3A and 3B. Technical reports are required as shown in Attachment 4.
6. Matters concerning the request or negotiation of any changes in the terms, conditions, or amounts cited in this Subaward, and any changes requiring prior approval, shall be directed to the PTE's Contact and the Subrecipient's Contact shown in Attachments 3A and 3B. Any such change made to this Subaward requires the written approval of each party's Authorized Official as shown in Attachments 3A and 3B.
7. The PTE may issue non-substantive changes to the Budget Period(s) and Budget modification shall be considered valid 14 days after receipt unless otherwise indicated by Subrecipient when sent to Subrecipient's Contact, as shown in Attachment 3B. Unilateral
8. Each party shall be responsible for its negligent acts or omissions and the negligent acts or omissions of its employees, officers, or directors, to the extent allowed by law.
9. Either party may terminate this Subaward with 30 days written notice. Notwithstanding, if the Awarding Agency terminates the Federal Award, PTE will terminate in accordance with Awarding Agency requirements. PTE notice shall be directed to the Contact, and Subrecipient notice shall be directed to the Contact as shown in Attachments 3A and 3B. PTE shall pay Subrecipient for termination costs as allowable under Uniform Guidance, 2 CFR 200, or 45 CFR Part 75 Appendix IX, as applicable
10. By signing this Subaward, including the attachments hereto which are hereby incorporated by reference, Subrecipient certifies that it will perform the Statement of Work in accordance with the terms and conditions of this Subaward and the applicable terms of the Federal Award, including the appropriate Research Terms and Conditions ("RTCs") of the Federal Awarding Agency, as referenced in Attachment 2. The parties further agree that they intend this subaward to comply with all applicable laws, regulations, and requirements.

By an Authorized Official of the PTE:  _____  Name: _____ Date: _____	By an Authorized Official of the Subrecipient:  _____  Name: _____ Date: _____
Title: _____	Title: _____

## **Attachment 1**

### **Certifications and Assurances**

#### **Certification Regarding Lobbying (2 CFR 200.450)**

By signing this Subaward, the Subrecipient Authorized Official certifies, to the best of his/her knowledge and belief, that no Federal appropriated funds have been paid or will be paid, by or on behalf of the Subrecipient, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement in accordance with 2 CFR 200.450.

If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or intending to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the Subrecipient shall complete and submit Standard Form -LLL, "Disclosure Form to Report Lobbying," to the PTE.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

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#### **Debarment, Suspension, and Other Responsibility Matters (2 CFR 200.214 and 2 CFR 180)**

By signing this Subaward, the Subrecipient Authorized Official certifies, to the best of his/her knowledge and belief that neither the Subrecipient nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any federal department or agency, in accordance with 2 CFR 200.213 and 2 CFR 180.

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#### **Audit and Access to Records**

Subrecipient certifies that it will provide PTE with notice of any adverse findings which impact this Subaward.

Subrecipient certifies compliance with applicable provisions of 2 CFR 200.501-200.521. If Subrecipient is not required to have a Single Audit as defined by 200.501, Awarding Agency requirements, or the Single Audit Act, then Subrecipient will provide notice of the completion of any required audits and will provide access to such audits upon request.

Subrecipient will provide access to records as required by parts 2 CFR 200.337 and 200.338 as applicable.

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#### **Program for Enhancement of Contractor Employee Protections (41 U.S.C 4712)**

Subrecipient is hereby notified that they are required to: inform their employees working on any federal award that they are subject to the whistleblower rights and remedies of the program; inform their employees in writing of employee whistleblower protections under 41 U.S.C §4712 in the predominant native language of the workforce; and include such requirements in any agreement made with a subcontractor or subgrantee.

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The Subrecipient shall require that the language of the certifications above in this Attachment 1 be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

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#### **Use of Name**

Neither party shall use the other party's name, trademarks, or other logos in any publicity, advertising, or news release without the prior written approval of an authorized representative of that party. The parties agree that each party may use factual information regarding the existence and purpose of the relationship that is the subject of this Subaward for legitimate business purposes, to satisfy any reporting and funding obligations, or as required by applicable law or regulation without written permission from the other party. In any such statement, the relationship of the parties shall be accurately and appropriately described.

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#### **Prohibition on Certain Telecommunication and Video Surveillance Services or Equipment**

Pursuant to 2 CFR 200.216, Subrecipient will not obligate or expend funds received under this Subaward to: (1) procure or obtain; (2) extend or renew a contract to procure or obtain; or (3) enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services (as described in Public Law 115-232, section 889) as a substantial or essential component of any system, or as a critical technology as part of any system.

**Attachment 2**  
**Federal Award Terms and Conditions**

Subaward Number

**Required Data Elements**

Awarding Agency Institute (If Applicable)

The data elements required by Uniform  
Guidance are incorporated

Federal Award Issue Date      FAIN      Assistance Listing No.

**This Subaward Is:**

Research & Development

Subject to FFATA

Key Personnel Per NOA

Assistance Listing Program Title (ALPT)

**General Terms and Conditions**

By signing this Subaward, Subrecipient agrees to the following:

1. To abide by the conditions on activities and restrictions on expenditure of federal funds in appropriations acts that are applicable to this Subaward to the extent those restrictions are pertinent. This includes any recent legislation noted on the Federal Awarding Agency's website:
2. 2 CFR 200
3. The Federal Awarding Agency's grants policy guidance, including addenda in effect as of the beginning date of the period of performance or as amended found at:
4. Research Terms and Conditions, including any Federal Awarding Agency's Specific Requirements found at:  
except for the following :
  - a. No-cost extensions require the written approval of the PTE. Any requests for a no-cost extension shall be directed to the Contact shown in Attachment 3A, not less than 30 days prior to the desired effective date of the requested change.
  - b. Any payment mechanisms and financial reporting requirements described in the applicable Federal Awarding Agency Terms and Conditions and Agency-Specific Requirements are replaced with Terms and Conditions (1) through (4) of this Subaward; and
  - c. Any prior approvals are to be sought from the PTE and not the Federal Awarding Agency.
  - d. Title to equipment as defined in 2 CFR 200.1 that is purchased or fabricated with research funds or Subrecipient cost sharing funds, as direct costs of the project or program, shall vest in the Subrecipient subject to the conditions specified in 2 CFR 200.313.
  - e. Prior approval must be sought for a change in Subrecipient PI or change in Key Personnel (defined as listed on the NOA).
5. Treatment of program income:

**Special Terms and Conditions:**

**Data Sharing and Access:**

Subrecipient agrees to comply with the Federal Awarding Agency's data sharing and/or access requirements as reflected in the NOA or the Federal Awarding Agency's standard terms and conditions as referenced in General Terms and Conditions 1-4 above.

**Data Rights:**

Subrecipient grants to PTE the right to use data created in the performance of this Subaward solely for the purpose of and only to the extent required to meet PTE's obligations to the Federal Government under its PTE Federal Award.

**Copyrights:**

to PTE an irrevocable, royalty-free, non-transferable, non-exclusive right and license to use, reproduce, make derivative works, display, and perform publicly any copyrights or copyrighted material (including any computer software and its documentation and/or databases) first developed and delivered under this Subaward solely for the purpose of and only to the extent required to meet PTE's obligations to the Federal Government under its PTE Federal Award.

Subrecipient grants to PTE the right to use any written progress reports and deliverables created under this Subaward solely for the purpose of and only to the extent required to meet PTE's obligations to the Federal Government under its Federal Award.

**Promoting Objectivity in Research (COI):**

Subrecipient must designate herein which entity's Financial Conflicts of Interest policy (COI) will apply:

If applying its own COI policy, by execution of this Subaward, Subrecipient certifies that its policy complies with the requirements of the relevant Federal Awarding Agency as identified herein:

Subrecipient shall report any financial conflict of interest to PTE's Administrative Representative or COI contact, as designated on Attachment 3A. Any financial conflicts of interest identified shall, when applicable, subsequently be reported to Federal Awarding Agency. Such report shall be made before expenditure of funds authorized in this Subaward and within 45 days of any subsequently identified COI.

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**Work Involving Human or Vertebrate Animals** (Select Applicable Options)

No Human or Vertebrate Animals

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**Human Subjects Data** (Select One)

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**Additional Terms**

**Attachment 3A**  
**Research Subaward Agreement**  
**Pass-Through Entity (PTE) Contacts**

Subaward Number:

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**PTE Information**

Entity Name:

Legal Address:

Website:

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**PTE Contacts**

Central Email:

Principal Investigator Name:

Email:

Telephone Number:

Administrative Contact Name:

Email:

Telephone Number:

COI Contact email (if different to above):

Financial Contact Name:

Email:

Telephone Number:

Email invoices?      Yes      No      Invoice email (if different):

Authorized Official Name:

Email:

Telephone Number:

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**PI Address:**

**Administrative Address:**

**Invoice Address:**



**Attachment 3B-2**  
**Highest Compensated Officers**

**Subrecipient:**

Institution Name:

PI Name:

**Highest Compensated Officers**

The names and total compensation of the five most highly compensated officers of the entity(ies) must be listed if the entity in the preceding fiscal year received 80 percent or more of its annual gross revenues in Federal awards; and \$25,000,000 or more in annual gross revenues from Federal awards; and the public does not have access to this information about the compensation of the senior executives of the entity 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. See FFATA § 2(b)(1) Internal Revenue Code of 1986.

Officer 1 Name:

Officer 1 Compensation:

Officer 2 Name:

Officer 2 Compensation:

Officer 3 Name:

Officer 3 Compensation:

Officer 4 Name:

Officer 4 Compensation:

Officer 5 Name:

Officer 5 Compensation:

**Attachment 4**  
**Reporting and Prior Approval Terms**

Subrecipient agrees to submit the following reports (PTE contacts are identified in Attachment 3A):

**Technical Reports:**

Monthly technical/progress reports will be submitted to the PTE's within days of the end of the month.

Quarterly technical/progress reports will be submitted within 30 days after the end of each project quarter to the PTE's

Annual technical / progress reports will be submitted within days prior to the end of each budget period to the PTE's. Such report shall also include a detailed budget for the next Budget Period, updated other support for key personnel, certification of appropriate education in the conduct of human subject research of any new key personnel, and annual IRB or IACUC approval, if applicable.

A Final technical/progress report will be submitted to the PTE's within days of the end of the Project Period or after termination of this award, whichever comes first.

Technical/progress reports on the project as may be required by PTE's in order for the PTE to satisfy its reporting obligations to the Federal Awarding Agency.

**Prior Approvals:**

Carryover:

**Other Reports:**

In accordance with 37 CFR 401.14, Subrecipient agrees to notify both the Federal Awarding Agency via iEdison and PTE's within 60 days after Subrecipient's inventor discloses invention(s) in writing to Subrecipient's personnel responsible for patent matters. The Subrecipient will submit a final invention report using Federal Awarding Agency specific forms to the PTE's within 60 days of the end of the Project Period to be included as part of the PTE's final invention report to the Federal Awarding Agency.

A negative report is required:

Property Inventory Report (only when required by Federal Awarding Agency), specific requirements below.

**Additional Technical and Reporting Requirements:**

**Attachment 5**  
**Statement of Work, Cost Sharing, Indirects & Budget**

**Statement of Work**

Below      Attached,      pages

If award is FFATA eligible and SOW exceeds 4000 characters, include a *Subrecipient Federal Award Project Description*

**Budget Information**

<b>Indirect Information</b>	Indirect Cost Rate (IDC) Applied	%	<b>Cost Sharing</b>
Rate Type:			If Yes, include Amount: \$

**Budget Details**      Below      Attached,      pages

**Budget Totals**

Direct Costs \$

Indirect Costs \$

Total Costs \$

*All amounts are in United States Dollars*

## Personnel

The research at Colgate University will be performed by co-PI Moore.

## Deliverables

The deliverables from Colgate University include algorithms, computational tools, peer-reviewed publications, presentations at conferences, and outreach. The deliverables will be centered around the following tasks taken directly from the Project Description.

**1: Characterizing permeability, anisotropy, and pore size dynamics to inform Darcy-based homogenized models.** The high-fidelity numerical simulations permit precise measurements of coarse-grained quantities such as permeability and anisotropy, as they depend on medium features such as porosity and microstructure geometry. Statistical measurements of these properties taken from large batches of the numerical simulations will inform reduced models based on Darcy's law with variable permeability to represent unresolved pore-structure that varies dynamically in time due to erosion.

**2: Developing and validating new parameterizations using machine learning techniques and numerical simulations.** The batches of high-fidelity simulations will be used to train machine learning and deep-neural networks. These new models will parameterize the effects of erosion on the evolution of macroscopic properties. Once trained, the networks will enable predictions of how medium properties respond dynamically to changes in environmental conditions without reliance on the (more expensive) direct physical simulations.

## Timeline

Deliverable 1 has been completed and a manuscript is currently under review at *Physica D*. Year 3 will focus on deliverable 2.

## Coordination with PI Quaife

Throughout the project, co-PI Moore will work closely with both PI Quaife and the funded Ph.D. student at FSU, Jake Cherry. This will include frequent emails and phone conversations, 1–2 Zoom and/or Google Meet meetings per month. The code and papers will be maintained on GitHub.

**SUMMARY  
PROPOSAL BUDGET**

Cumulative

ORGANIZATION <b>Colgate University</b>		FOR NSF USE ONLY			
		PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR <b>Matthew Moore</b>		AWARD NO. <b>2012560</b>			
A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)		NSF Funded Person-months		Funds Requested By proposer	
		CAL	ACAD	SUMR	Funds granted by NSF (if different)
1. <b>Matthew N Moore - Co-PI</b>		0.00	0.00	1.00	<b>10,421</b>
2.					
3.					
4.					
5.					
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)		0.00	0.00	0.00	<b>0</b>
7. ( <b>1</b> ) TOTAL SENIOR PERSONNEL (1 - 6)		0.00	0.00	1.00	<b>10,421</b>
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. ( <b>0</b> ) POST DOCTORAL SCHOLARS		0.00	0.00	0.00	<b>0</b>
2. ( <b>0</b> ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)		0.00	0.00	0.00	<b>0</b>
3. ( <b>0</b> ) GRADUATE STUDENTS					<b>0</b>
4. ( <b>0</b> ) UNDERGRADUATE STUDENTS					<b>0</b>
5. ( <b>0</b> ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)					<b>0</b>
6. ( <b>0</b> ) OTHER					<b>0</b>
TOTAL SALARIES AND WAGES (A + B)					<b>10,421</b>
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)					<b>3,335</b>
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)					<b>13,756</b>
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)					
TOTAL EQUIPMENT					<b>0</b>
E. TRAVEL      1. DOMESTIC (INCL. U.S. POSSESSIONS)					<b>1,000</b>
2. INTERNATIONAL					<b>0</b>
F. PARTICIPANT SUPPORT COSTS					
1. STIPENDS \$ <b>0</b>					
2. TRAVEL <b>0</b>					
3. SUBSISTENCE <b>0</b>					
4. OTHER <b>0</b>					
TOTAL NUMBER OF PARTICIPANTS ( <b>0</b> )					<b>0</b>
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES					<b>0</b>
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION					<b>0</b>
3. CONSULTANT SERVICES					<b>0</b>
4. COMPUTER SERVICES					<b>0</b>
5. SUBAWARDS					<b>0</b>
6. OTHER					<b>0</b>
TOTAL OTHER DIRECT COSTS					<b>0</b>
H. TOTAL DIRECT COSTS (A THROUGH G)					<b>14,756</b>
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE)					
TOTAL INDIRECT COSTS (F&A)					<b>5,165</b>
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)					<b>19,921</b>
K. FEE					<b>0</b>
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)					<b>19,921</b>
M. COST SHARING PROPOSED LEVEL \$ <b>0</b>		AGREED LEVEL IF DIFFERENT \$			
PI/PD NAME <b>Matthew Moore</b>		FOR NSF USE ONLY			
		INDIRECT COST RATE VERIFICATION			
ORG. REP. NAME* <b>Dale Meeks</b>		Date Checked	Date Of Rate Sheet	Initials - ORG	

## Budget Justification

### A: Senior Personnel (co-PI: Matthew Moore)

The requested senior personnel funding is to support one month of co-PI Moore's summer salary in year 3. During this period, the PIs will work together to develop and implement algorithms, write papers, and work closely with the graduate student. Co-PI Moore's summer salary in year 3 will be \$93,788 with the monthly salary listed in the table:

	Year 3	Total
co-PI Moore	\$10,421	\$10,421

### C: Fringe Benefits

The fringe benefits of co-PI Moore at Colgate University are 32%.

	Year 3	Total
co-PI Moore Fringe	\$3,335	\$3,335
Total	\$3,335	\$3,335

### E: Domestic Travel

The requested travel funds is to partially fund a domestic trip for co-PI Moore in year 3. The expected costs per conference participant is \$1,000 with a breakdown of \$300 for airfare, \$300 for lodging, \$56 for local transportation, \$144 for meals (four days at \$36 per day), and \$200 for conference registration. Potential meeting venues include several SIAM Meetings (Annual Meetings, CSE, Dynamical Systems), APS Fluids Meetings, or appropriately themed workshops. Alternatively, co-PI Moore may use these travel funds to visit PI Quaife and the funded graduate student at FSU in order to collaborate on the project.

	Year 3	Total
Domestic Travel	\$1,000	\$1,000

### H: Total Direct Costs

Total of Sections A–G.

Year 3	Total
\$14,756	\$14,756

### I: Indirect Costs

Colgate University's indirect cost rate is 35% for research on modified total direct costs (MTDC). The base for overhead is \$14,756 in year 3.

Year 3	Total
\$5,165	\$5,165

**J: Total Direct and Indirect Costs**

Total of Sections H and I.

Year 3	Total
\$19,921	\$19,921

## **Attachment 6**

### **Notice of Award (NOA) and any additional documents**

The following pages include the NOA and if applicable any additional documentation referenced throughout this Subaward.

Not incorporating the NOA or any additional documentation to this Subaward.

**Award Documents** | MAIN ▶**Organization:** Florida State University[\*\*View Print Friendly Version\*\*](#)[\*\*Return to Search Results\*\*](#)

# National Science Foundation

**2415 Eisenhower Avenue, Alexandria, Virginia 22314, USA**

## NATIONAL SCIENCE FOUNDATION

### Award Notice

**Award Number (FAIN):** 2012560**Managing Division Abbreviation:** DMS**Amendment Number:** 000

### AWARDEE INFORMATION

**Award Recipient:** Florida State University**Awardee Address:** 874 Traditions Way, 3rd Floor Tallahassee, FL 323064166**Official Awardee Email Address:** nsfaward@mailer.fsu.edu**Unique Entity Identifier (DUNS ID):** 790877419

### AMENDMENT INFORMATION

**Amendment Type:** New Project**Amendment Date:** 07/28/2020**Amendment Number:** 000**Proposal Number:** 2012560**Amendment Description:**

The National Science Foundation hereby awards a Continuing Grant for support of the project described in the proposal referenced above as modified by revised budget dated 07/14/2020.

Costs of entertainment, amusement, diversion and social activities, and any costs directly associated with such costs (such as meals, lodging, rentals, transportation and gratuities) are unallowable. When certain meals are an integral and necessary part of a conference or meeting (i.e., working meals where business is transacted), grant funds may be used for such meals. Grant funds may also be used to furnish a reasonable amount of coffee or soft drinks for conference or meeting participants and attendees during coffee breaks. No NSF funds may be spent on meals or coffee breaks for intramural meetings of an organization or any of its components, including, but not limited to, laboratories, departments and centers.

### AWARD INFORMATION

**Award Number (FAIN):** 2012560**Award Instrument:** Continuing Grant**Award Date:** 07/28/2020

**Award Period of Performance:** Start Date: 08/01/2020 End Date: 07/31/2023  
**Project Title:** Erosion, Transport, and Dispersion in Granular and Porous Media  
**Managing Division Abbreviation:** DMS  
**Research and Development Award:** Yes  
**Funding Opportunity:** PD 16-1271 Computational Mathematics  
**CFDA Number and Name:** 47.049 Mathematical and Physical Sciences

## FUNDING INFORMATION

**Amount Obligated by this Amendment:** \$83,900  
**Total Intended Award Amount:** \$249,636  
**Total Approved Cost Share or Matching Amount:** \$0  
**Total Amount Obligated to Date:** \$83,900  
**Expenditure Limitation:** Not Applicable

Contingent on the availability of funds and scientific progress of the project, NSF expects to continue support at approximately the following level:

Fiscal Year	Increment Amount
2021	\$86,811
2022	\$78,925

## PROJECT PERSONNEL

<b>Principal Investigator:</b> Matthew N Moore	<b>Email:</b> mnmoore2@fsu.edu	<b>Institution:</b> Florida State University
<b>Co-Principal Investigator:</b> Bryan D Quaife	<b>Email:</b> bquaife@fsu.edu	<b>Institution:</b> Florida State University

## NSF CONTACT INFORMATION

<b>Managing Grants Official</b> (Primary Contact) <b>Name:</b> Lynda Kummelt <b>Email:</b> lkummelt@nsf.gov	<b>Awarding Official Name:</b> Aprile N Roberson <b>Email:</b> aroberso@nsf.gov	<b>Managing Program Officer Name:</b> Małgorzata Peszynska <b>Email:</b> mpeszyns@nsf.gov
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## GENERAL TERMS AND CONDITIONS

This is awarded pursuant to the authority of the National Science Foundation Act of 1950, as amended (42 U.S.C. 1861-75) and is subject to Research Terms and Conditions (RTCs) dated 03/14/2017, and NSF Agency Specific Requirements, dated 02/25/2019, available at <https://www.nsf.gov/awards/managing/rtc.jsp>.

This institution is a signatory to the Federal Demonstration Partnership (FDP) Phase VI Agreement which requires active institutional participation in new or ongoing FDP demonstrations and pilots.

## BUDGET

<b>A. Senior Personnel</b>	
Senior Personnel Count	2.00
Senior Personnel Calendar Months	0.00
Senior Personnel Academic Months	0.00
Senior Personnel Summer Months	2.00
Senior Personnel Amount	\$20,273
<b>B. Other Personnel</b>	
<b>Post Doctoral Scholars</b>	
Post Doctoral Count	0.00
Post Doctoral Calendar Months	0.00
Post Doctoral Academic Months	0.00
Post Doctoral Summer Months	0.00
Post Doctoral Amount	\$0
<b>Other Professionals</b>	
Other Professionals Count	0.00
Other Professionals Calendar Months	0.00
Other Professionals Academic Months	0.00
Other Professionals Summer Months	0.00

Other Professionals Amount	\$0
<b>Graduate Students</b>	
Graduate Students Count	1.00
Graduate Students Amount	\$21,000
<b>Undergraduate Students</b>	
Undergraduate Students Count	0.00
Undergraduate Students Amount	\$0
<b>Secretarial - Clerical</b>	
Secretarial - Clerical Count	0.00
Secretarial - Clerical Amount	\$0
<b>Other</b>	
Other Count	0.00
Other Amount	\$0
Total Salaries and Wages (A+B)	\$41,273
<b>C. Fringe Benefits</b>	\$5,444
Total Salaries, Wages, Fringe Benefits (A + B + C)	\$46,717
<b>D. Equipment</b>	\$0
<b>E. Travel</b>	
Domestic	\$0
International	\$0
<b>F. Participant Support Costs</b>	
Participant Support Costs Stipends	\$0
Participant Support Costs Travel	\$0
Participant Support Costs Subsistence	\$0

Participant Support Costs Other	\$0
Total Number of Participants	0.00
<i>Total Participant Costs (F)</i>	\$0
<b>G. Other Direct Costs</b>	
Materials Supplies	\$3,000
Publication Costs	\$0
Consultant Services	\$0
Computer Services	\$0
Subawards	\$0
Other	\$7,336
<i>Total Other Direct Costs (G)</i>	\$10,336
<b>H. Total Direct Costs (A Through G)</b>	<b>\$57,053</b>
<b>I. Indirect Costs*</b>	<b>\$26,847</b>
<b>J. Total Direct and Indirect Costs (H + I)</b>	\$83,900
<b>K. Fees</b>	\$0
<b>L. Total Amount of Request (J) OR (J + K)</b>	<b>\$83,900</b>
<b>M. Cost Sharing Proposed Level</b>	\$0

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\*Indirect Cost Rates

Item Name	Indirect Cost Rate
F&A	54.0000%

These rates are at the time of award and are based upon the budget submitted to the NSF. It does not include any out-year adjustments. The NSF will not modify awards simply to correct indirect cost rates

cited in the award notice. See the Proposal & Award Policies & Procedures Guide (PAPPG) Chapter X.A.3.a. for guidance on re-budgeting authority.

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# National Science Foundation

**2415 Eisenhower Avenue, Alexandria, Virginia 22314, USA**

## NATIONAL SCIENCE FOUNDATION

### Award Notice

**Award Number (FAIN):** 2012560**Managing Division Abbreviation:** DMS**Amendment Number:** 001

## AWARDEE INFORMATION

**Award Recipient:** Florida State University**Awardee Address:** 874 Traditions Way, 3rd Floor Tallahassee, FL 323064166**Official Awardee Email Address:** nsfaward@mailer.fsu.edu**Unique Entity Identifier (DUNS ID):** 790877419

## AMENDMENT INFORMATION

**Amendment Type:** Other Admin No Fund Actions**Amendment Date:** 08/06/2020**Amendment Number:** 001**Proposal Number:** Not Applicable**Amendment Description:**

The purpose of this amendment is to change the PI or co-PI in accordance with the Change PI and Add/Change Co-PI request submitted on 07/31/2020. Effective with this amendment, the project is now under the direction of Bryan D Quaife.

Except as modified by this amendment, the award conditions remain unchanged.

## PROJECT PERSONNEL

**Principal Investigator:** Bryan D Quaife**Email:** bquaife@fsu.edu**Institution:** Florida State University

## NSF CONTACT INFORMATION

**Managing Grants Official** (Primary Contact)  
**Name:** Lynda Kummelt  
**Email:** lkummelt@nsf.gov

**Awarding Official**  
**Name:** Aprile N Roberson  
**Email:** aroberso@nsf.gov

**Managing Program Officer**  
**Name:** Malgorzata Peszynska  
**Email:** mpeszyns@nsf.gov

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# National Science Foundation

**2415 Eisenhower Avenue, Alexandria, Virginia 22314, USA**

## NATIONAL SCIENCE FOUNDATION

### Award Notice

**Award Number (FAIN):** 2012560

**Managing Division Abbreviation:** DMS

**Amendment Number:** 002

### AWARDEE INFORMATION

**Award Recipient:** Florida State University

**Awardee Address:** 874 Traditions Way, 3rd Floor Tallahassee, FL 323064166

**Official Awardee Email Address:** nsfaward@mailer.fsu.edu

**Unique Entity Identifier (DUNS ID):** 790877419

### AMENDMENT INFORMATION

**Amendment Type:** Other Admin No Fund Actions

**Amendment Date:** 09/01/2020

**Amendment Number:** 002

**Proposal Number:** Not Applicable

**Amendment Description:**

The purpose of this amendment is to authorize the awardee to enter into the proposed subaward agreement in accordance with the Subawarding, Transferring or Contracting Out Part of an NSF Award request submitted on 08/26/2020.

The Foundation authorizes the awardee to enter into the proposed subaward arrangement and to fund the subaward with award funds up to the amount indicated in the approved budget or NSF-approved post award request. The subaward should contain appropriate provisions consistent with Appendix B of the Research Terms and Conditions (RTC) dated December 10, 2018, or Articles 8.a.4. and 9 of the NSF Grant General Conditions (GC-1) dated February 25, 2019 (as appropriate), as well as any special conditions included in this award.

Subawardee:

United States Naval Academy

Except as modified by this amendment, the award conditions remain unchanged.

### PROJECT PERSONNEL

**Principal Investigator:** Bryan D

**Email:** bquaife@fsu.edu

**Institution:** Florida State

Quaife

University

**NSF CONTACT INFORMATION****Managing Grants  
Official (Primary  
Contact)****Name:** Lynda Kummelt  
**Email:**  
lkummelt@nsf.gov**Awarding  
Official****Name:** Aprile N  
Roberson  
**Email:**  
aroberso@nsf.gov**Managing  
Program Officer****Name:** Małgorzata  
Peszynska  
**Email:**  
mpeszyns@nsf.govDownload [Adobe Acrobat Reader](#) for viewing PDF files

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# National Science Foundation

**2415 Eisenhower Avenue, Alexandria, Virginia 22314, USA****Notification of NSF Approval of Additional Funding Support**

Award No. 2012560

Amendment No. 003

Division Identifier: DMS

Release Date: 08/03/2021

Released By: Malgorzata Peszynska

Amount: \$86,811

Award End Date: 07/31/2023

As authorized by the original award, the National Science Foundation hereby releases \$86,811 for additional support of the award referenced above. The award, with this amendment, now totals \$170,711 and will end on 07/31/2023.

The attached budget indicates the amounts, by categories, on which NSF has based its continued support.

This award is subject to the terms and conditions referenced in the original award notice. The most current version of the terms and conditions can be accessed at:

[https://www.nsf.gov/awards/managing/award\\_conditions.jsp?org=NSF](https://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF).

This award is subject to the Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards (Uniform Guidance). NSF's implementation of the Uniform Guidance is contained in the Grant Conditions referenced in this award.

Any technical or programmatic questions regarding this notification should be addressed to the cognizant NSF Program Officer: Malgorzata Peszynska , mpeszyns@nsf.gov, (703)292-2811.

Any award specific questions of an administrative or financial nature should be addressed to the grants official at <http://www.nsf.gov/bfa/dga/docs/liaison.pdf>. The cognizant grants official can be identified by associating the three-letter division identifier referenced above with the grants official for that division on the liaison website.

Attachment: [template/932582593\\_Proposal\\_Budget\\_Year\\_2021\\_2012560.pdf](#)

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# National Science Foundation

**2415 Eisenhower Avenue, Alexandria, Virginia 22314, USA**

## Notification of NSF Approval of Additional Funding Support

Award No. 2012560  
Amendment No. 004  
Division Identifier: DMS  
Release Date: 07/22/2022  
Released By: Yuliya Gorb  
Amount: \$78,925  
Award End Date: 07/31/2023

As authorized by the original award, the National Science Foundation hereby releases \$78,925 for additional support of the award referenced above. The award, with this amendment, now totals \$249,636 and will end on 07/31/2023.

The attached budget indicates the amounts, by categories, on which NSF has based its continued support.

This award is subject to the terms and conditions referenced in the original award notice. The most current version of the terms and conditions can be accessed at:  
[https://www.nsf.gov/awards/managing/award\\_conditions.jsp?org=NSF](https://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF).

This award is subject to the Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards (Uniform Guidance). NSF's implementation of the Uniform Guidance is contained in the Grant Conditions referenced in this award.

Any technical or programmatic questions regarding this notification should be addressed to the cognizant NSF Program Officer: Yuliya Gorb , ygorb@nsf.gov, (703)292-2113.

Any award specific questions of an administrative or financial nature should be addressed to the grants official at <http://www.nsf.gov/bfa/dga/docs/liaison.pdf>. The cognizant grants official can be identified by associating the three-letter division identifier referenced above with the grants official for that division on the liaison website.

Attachment: [template/102589610\\_Proposal\\_Budget\\_Year\\_2022\\_2012560.pdf](#)

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**From:** [Dale Meeks](#)  
**To:** [Dale Meeks](#)  
**Subject:** FW: NSF Award Notice for Award ID 2012560 - Amendment ID 005: OMNI Project 100138  
**Date:** Tuesday, January 24, 2023 3:46:08 PM

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**From:** [lkummelt@nsf.gov](mailto:lkummelt@nsf.gov) <[lkummelt@nsf.gov](mailto:lkummelt@nsf.gov)>  
**Sent:** Monday, December 12, 2022 12:31 PM  
**To:** SRA Pre-Award General Mailbox <[SRA-Pre@fsu.edu](mailto:SRA-Pre@fsu.edu)>  
**Cc:** [adedmon@nsf.gov](mailto:adedmon@nsf.gov); [amharris@nsf.gov](mailto:amharris@nsf.gov); Bryan Quaife <[bquaife@fsu.edu](mailto:bquaife@fsu.edu)>; [dwaldner@nsf.gov](mailto:dwaldner@nsf.gov); [kpigford@nsf.gov](mailto:kpigford@nsf.gov); [oandrews@nsf.gov](mailto:oandrews@nsf.gov); [salston@nsf.gov](mailto:salston@nsf.gov); [ygorb@nsf.gov](mailto:ygorb@nsf.gov)  
**Subject:** NSF Award Notice for Award ID 2012560 - Amendment ID 005

## NATIONAL SCIENCE FOUNDATION

### Award Notice

**Award Number (FAIN):** 2012560

**Managing Division Abbreviation:**

DMS

**Amendment Number:** 005

#### RECIPIENT INFORMATION

**Recipient (Legal Business Name):** FLORIDA STATE UNIVERSITY

**Recipient Address:** 874 TRADITIONS WAY TALLAHASSEE, FL 32306-0001

**Official Recipient Email Address:** [SRA-Pre@fsu.edu](mailto:SRA-Pre@fsu.edu)

**Unique Entity Identifier (UEI):** JF2BLNN4PJC3

#### AMENDMENT INFORMATION

**Amendment Type:** Other Admin No Fund Actions

**Amendment Date:** 12/12/2022

**Amendment Number:** 005

**Proposal Number:** Not Applicable

**Amendment Description:**

The purpose of this amendment is to authorize the awardee to enter into the proposed subaward agreement in accordance with the Subawarding, Transferring or Contracting Out Part of an NSF Award request submitted on 11/03/2022.

Except as modified by this amendment, the award conditions remain unchanged.

**PROJECT PERSONNEL**

**Principal Investigator:** Bryan D  
Quaife

**Email:** [bquaife@fsu.edu](mailto:bquaife@fsu.edu)

**Organization:** FLORIDA STATE  
UNIVERSITY

**NSF CONTACT INFORMATION**

**Managing Grants Official**  
(Primary Contact)  
**Name:** Lynda Kummelt  
**Email:** [lkummelt@nsf.gov](mailto:lkummelt@nsf.gov)  
**Phone:** (703) 292-7721

**Awarding Official**  
**Name:** Lynda  
Kummelt  
**Email:** [lkummelt@nsf.gov](mailto:lkummelt@nsf.gov)

**Managing Program Officer**  
**Name:** Yuliya Gorb  
**Email:** [vgorb@nsf.gov](mailto:vgorb@nsf.gov)  
**Phone:** (703) 292-2113