2013-2587

# SUBCONTRACT No. 2014-3020 BETWEEN THE REGENTS OF THE UNIVERSITY OF CALIFORNIA AND NORTH CAROLINA STATE UNIVERSITY

This subcontract is awarded under the authority of Prime Award No. KF-55825 issued by W.M. Keck Foundation.

## SUBCONTRACT SCHEDULE ARTICLE 1 PERFORMANCE AND DELIVERY

#### A. STATEMENT OF WORK

The statement of work to be performed under this subcontract is described in Exhibit A.

#### B. KEY PERSONNEL

The key personnel representing the University and the Subcontractor shall be as follows:

Principal Investigator for University: Anthony A. James

Key Investigator for Subcontractor: Fred Gould

In the event a change in Key Investigator is necessary, the University will be notified within thirty (30) days after the Subcontractor reasonably knows the change is necessary.

#### C. PERIOD OF PERFORMANCE

The period of performance of this subcontract shall be 1/1/2014 through 12/31/2016.

#### D. TOTAL ESTIMATED COST

It is estimated that the total cost to the University for performance of this subcontract shall not exceed \$224,990.

#### E. DELIVERY

All materials and services called for under this subcontract shall be completed and delivered to the University on or before 12/31/2016 unless extended by prior written authorization.

#### **ARTICLE 2**

#### COST, PAYMENT AND BILLING

#### A. ALLOWABLE COSTS AND FEES

Allowable costs and fees eligible for reimbursement to the Subcontractor for performance of this subcontract shall be determined in accordance with:

- a. The budget, attached hereto and incorporated herein as Exhibit B.
- b. The terms of this subcontract.
- c. The Prime Award attached hereto and incorporated herein as Exhibit C.

#### B. REBUDGETING

Funds may be rebudgeted between components without prior approval except where prior approval is specifically required by the applicable terms and conditions including "flow down" provisions of the Prime Award. Any restriction on rebudgeting listed elsewhere in this Subcontract, however, shall take precedence over the above indicated authorities and policies.

Rebudgeting requests which require Prime Award approval should be directed to the University's Principal Investigator for approval and then forwarded to the University's Office of Research Administration, Sponsored Projects Administration for administrative endorsement and transmittal to the prime agency for approval.

#### C. PAYMENT

Payment will be made by the University to the Subcontractor on a monthly basis, consistent with the provisions of Article 2A, upon presentation of the Subcontractor's invoice. The University shall not pay any invoice where total payments would result in a cumulative payment in excess of the limitations imposed by Article 1D or where rates used to determine costs vary from those (if shown) in Article 2A.

The University, at its option, may elect to pay any invoice in accordance with Article 2A if the invoice is at variance with the article or may return the invoice unpaid to the Subcontractor for correction and resubmittal.

All payments made are provisional, subject to acceptance (Article 7A), post-audit, and adjustment.

#### D. BILLING

Invoices (Exhibit F) shall be submitted as follows:

- 1. On a monthly basis.
- 2. Referencing the subcontract number and numerical sequence of the invoice.
- 3. Providing detail of expenditure in accordance with the budget categories listed.
- 4. Addressed to: University of California, Irvine

School of Medicine

Department of Microbiology and Molecular Genetics

B240 Med Sci I Irvine, CA 92697-4025

Attn: Kimberly Smith-Lyons

Fund No. 53942

Email: smithkl@uci.edu

### ARTICLE 3 PATENT RIGHTS

Subcontractor agrees that if patentable discoveries or inventions are made and/or conceived or for the first time actually reduced to practice by the Subcontractor or its employees under the terms of this agreement, Subcontractor shall promptly furnish University with complete information thereon. Disposition of all subject inventions will be made in accordance with the provision of the Prime Award KF-55825. Inventorship will be determined in accordance with Title 35 of the United States Code (US Patent Law).

### ARTICLE 4 PUBLICATIONS, COPYRIGHTS AND RIGHTS TO DATA

Prior review by University's Principal Investigator shall be obtained by Subcontractor for publication of any research report or other publication resulting from work performed on this agreement. Decisions about authorship on all publications resulting from work under the prime award and this agreement shall be made by University's Principal Investigator and Subcontractor's Key Investigator, prior to any such publication. Two reprints of publications resulting from work performed in whole or in part under this agreement shall be submitted to University's Principal Investigator.

Except as otherwise provided in the conditions of the Prime Award, when publications or similar materials are developed from work supported in whole or in part by this agreement, the author is free to arrange for copyright without approval. A copy of such material shall be provided to University.

University shall have the right to publish, disclose, disseminate and use, in whole or in part, any data and information received or developed under this agreement.

### ARTICLE 5 ADVERTISING AND PUBLICITY

Neither the Subcontractor nor the University will use the name of the other, either expressly or by implication, in any news, publicity release, or other fashion without the express written approval of the other party of this agreement.

### ARTICLE 6 ACKNOWLEDGMENT

An acknowledgment of University and Prime Award 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 on work supported by W.M. Keck Foundation under Prime Award no. KF-55825 and The Regents of the University of California.

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

Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of W.M. Keck Foundation or The Regents of the University of California.

### ARTICLE 7 ACCEPTANCE AND REPORTS

#### A. INSPECTION AND ACCEPTANCE

All work performed under this subcontract is subject to inspection and acceptance by the University or its authorized representative. Acceptance is defined as good faith adherence to statement of work, and completion and submission of deliverables.

#### **B. TECHNICAL REPORTS AND DOCUMENTS**

Technical progress reports are due on an annual basis.

Any reports required by this subcontract shall be due within thirty (30) days of the date of formal request.

Inspection and acceptance for all reports and documents called for under this subcontract shall be at the following address:

University of California, Irvine School of Medicine Department of Microbiology and Molecular Genetics 2232 McGaugh Hall Irvine, CA 92697-4025

Attn: Professor Anthony A. James

#### C. CLOSE-OUT

Subcontractor shall submit Patent Statement and Equipment Report (Exhibit D) and Subcontractors Release documents (Exhibit E) no later than sixty (60) days after termination of this Agreement to the billing address in order to fulfill the reporting requirements of the Prime Award.

### ARTICLE 8 SPECIAL PROVISIONS

#### A. AUDIT

Access to Financial Records: Financial records, supporting documents, and all other records pertinent to this agreement shall be retained for a period of three (3) years from the date of termination of this agreement. Records that are the subject matter of audits, appeals, litigation, or the settlement of claims arising out of the performance of this agreement shall be retained until such audits, appeals, litigation, or claims have been resolved. Unless court actions or audit proceedings have been initiated, Subcontractor may substitute copies made by microfilming, photocopying or similar methods for the original records.

<u>Subcontracts over \$10,000</u>: University, Prime Award Sponsor, the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, paper and records of Subcontractor which are directly pertinent to this agreement for the purpose of making audits, examinations, excerpts and transcriptions.

#### **B. ASSIGNMENT**

This subcontract may not be assigned in whole or in part without the prior written consent of the University.

#### C. TERMINATION

This subcontract may be terminated by either party upon thirty (30) days written notice to the other party, except that the termination of the Prime Award KF-55825 concurrently terminates this subcontract with the same date. University agrees to reimburse Subcontractor for all costs and noncancelable obligations incurred in the performance of the project prior to receipt of termination notice.

#### D. TITLE TO EQUIPMENT

Title to equipment (initial cost of \$5000 or more and an expected service life of two (2) years or more) purchased by the Subcontractor pursuant to the terms of this subcontract shall vest in the Subcontractor provided prime agency has not reserved the right to take or transfer title.

#### E. INDEMNIFICATION

To the extent permitted and in the manner prescribed under the North Carolina Tort Claims Act, GS § 143-291, et seq., University and the Subcontractor will each be responsible for their own negligence and the negligence of their employees and agents. Neither University nor the Subcontractor waive any rights or defenses under this Act, nor do they waive any defense of sovereign immunity except to the extent provided in the Act.

#### F. PRIME AWARD

All applicable provisions contained in Prime Award No. KF-55825 from W.M. Keck Foundation shall be binding upon the Subcontractor, and the Subcontractor hereby agrees to comply with same. A copy of the Prime Award is attached to this subcontract as Exhibit C.

#### G. CERTIFICATIONS

- 1. Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions
  - (a) The prospective lower tier participant certifies, by execution of this subcontract, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department of agency.
  - (b) Where the prospective lower tier participant is unable to certify to any of the statements in this certification such prospective participant shall attach an explanation to this proposal.
- 2. Restriction on Lobbying (in all subcontracts over \$100,000 under federal grants, contract, and cooperative agreements).

Subcontractor in executing this agreement is certifying that as of December 23, 1989, it neither has used nor will use any appropriated federal funds to lobby for or otherwise influence the awarding or amending of this subcontract, and that it will disclose the use of any non-federal funds used for these purposes.

### ARTICLE 9 ASSURANCES

The Subcontractor agrees to conduct all effort required in performance of this Subcontract in compliance with the following:

- A. <u>Civil Rights/Nondiscrimination</u>: Subcontractor must comply with applicable provisions of Title VI of the Civil Rights Act of 1964, as amended; Executive Orders 11246 and 11375; the Age Discrimination Act of 1975, as amended; Title IX of the Education Amendments of 1972, as amended; and Section 504 of the Rehabilitation Act of 1973, as amended.
- B. <u>Use of U.S.-Flag Carriers</u>: If foreign air travel is authorized under this agreement, U.S.-flag air carriers service shall be used to the extent such service is available, as specified in prime award. The substance of this clause shall be inserted in all subcontracts at any tier under this agreement.
- C. <u>Use of Human Subjects</u>: Use of human subjects will be in accordance with 45 CFR 46, subpart A, "Protection of Human Subjects." In addition, Subcontractor certifies that it has procedures established and implemented to assure continuous monitoring and compliance

with these regulations. As applicable, evidence of approval by the Subcontractor's Institutional Review Board shall be provided to University prior to initiating this project and annually thereafter for the duration of the project.

- D. <u>Use of Laboratory Animals</u>: Use of laboratory animals will comply with applicable portions of the Animal Welfare Act (Pub. L.89-544, as amended) and NIH Publication 85-23, "Guide for the Care and use of laboratory Animals." In addition, subcontractor certifies that it has procedures established and implemented to assure continuous monitoring and compliance with these regulations. As applicable, evidence of approval by the Subcontractor's Institutional Animal Care and Use Committee shall be provided to University prior to initiating this project and annually thereafter for the duration of the project.
- E. <u>Scientific Fraud (Misconduct) Assurance</u>: The Subcontractor hereby gives assurance that an administrative review process has been established regarding procedures for dealing with and reporting possible misconduct in science and reporting requirements of the published scientific misconduct regulations will be followed.

### ARTICLE 10 NOTICE AND CONTACTS

A. Notices shall be directed to the appropriate individual(s) noted below.

#### **University Contacts**

#### **Principal Investigator**

Name: Anthony A. James

Address: Department of Microbiology &

Molecular Genetics 2232 McGaugh Hall Irvine, CA 92697-4025

Telephone: 949-824-5930, 3210

Fax: 949-824-2814 Email: aajames@uci.edu

#### **Authorized Official**

Name: Grace J. Park

Address: University of California, Irvine Office of Research - Sponsored Projects

5171 California, Suite 150 Irvine, CA 92697-7600

Telephone: (949) 824-7218 Fax: (949) 824-2094

Email: subawards@research.uci.edu

#### **Financial Contact**

Name: Kimberly Smith-Lyons Address: Department of Microbiology&

#### **Subcontractor Contacts**

#### **Key Investigator**

Name: Fred Gould

Address: Thomas Hall, Box 7613 - NCSU Campus

Raleigh, NC 27695

Telephone: 919-515-1647

Fax:

Email: fred\_gould@ncsu.edu

#### **Authorized Official**

Name: Dr. Jeff Cheek

Assoc. VCR

Address: 2701 Sullivan Drive, Admin Svcs. III - CB 7514

Raleigh, NC 27695-7514

Telephone: 919-515-2444
Fax: 919-515-7721
Email: sps@ncsu.edu

#### **Financial Contact**

Name: Julie Schwindt

Address: 2701 Sullivan Drive, Admin Svcs. III-CB 7214

Raleigh, NC 27695-7214

Molecular Genetics B240 Med Sci I Irvine, CA 92697-4025 Telephone: 949-824-5261

Fax: 949-824-8598

Email: smithkl@uci.edu

Telephone: 919-151-2153 Fax: 919-515-4693

Email: cnghelpdesk@ncsu.edu

B. Whenever any notice is to be given hereunder, it shall be in writing and shall be deemed received, if delivered by courier on a business day, on the day delivered, or on the second business day following mailing, if sent by first-class certified or registered mail, postage prepaid.

### ARTICLE 11 CONTENTS AND ORDER OF PRECEDENCE

Attached to this subcontract are the following exhibits:

**EXHIBIT A - Statement of Work** 

**EXHIBIT B - Cost Estimate** 

EXHIBIT C - Prime Award No. KF-55825

**EXHIBIT D - Patent Statement and Equipment Report** 

EXHIBIT E - Subcontractor's Release

**EXHIBIT F - Invoice Form** 

Insofar as these instruments apply to this subcontract together with the instruments previously enumerated and those listed below, they constitute the entire agreement and understanding between the University and Subcontractor. In the event of an inconsistency in this subcontract, the inconsistency shall be resolved by giving precedence in the following order.

- 1. Subcontract Schedule
- 2. Prime Award No. KF-55825

### ARTICLE 12 GOVERNING LAW

This section is intentionally left blank.

### ARTICLE 13 ENTIRE AGREEMENT, WAIVERS, AND AMENDMENTS

This subcontract contains the full and complete agreement between the two parties. All modifications must be in writing and signed by the University's Institutional Official and the Subcontractor's Contracting Officer. No verbal agreements or conversations with any officer or employee of either party shall affect or modify any of the terms and conditions of this subcontract.

#### APPROVED AND AGREED:

The Regents of the University of California	Subcontractor:
By: grafa	By: Stefame ). Samsler
Name: Grace J. Park	Name: Stefanie D Saunders Assistant Director, Operations NCSU Sponsored Programs
Title: Subcontract Officer	Title:
Date: 3/27/14	Date: 3/27/14

#### Scope of Work from Dr. Fred Gould, North Carolina State University

#### **Contents:**

Cover letter from signing official or SO from the sub-contract university Scope of work
Biosketch
Personnel Justification
Budget form or spread sheet of expenses
Sub recipient commitment form

#### Scope of work:

Summary: Population genetic modeling of the evolutionary dynamics of interactions of unlinked genes and selfish genetic elements often generates unexpected predictions and these are rarely tested empirically. Our goal is to conduct rigorous experimental assessments of some of these predictions that will further a basic understanding of evolution and advance the new field of applied evolutionary biology. These predictions in four scenarios in laboratory cage trials using the Asian malaria vector, Anopheles stephensi. We hypothesize that these models can predict accurately the interactions of combinations of transgenes that suppress and modify wild-type mosquito populations. This work will enhance the basic understanding of multi-locus evolutionary dynamics and provide important guidance for research on other invasive species that are not amenable to laboratory testing.

Goals and Methodology: The overall goal of this project is to empirically test predictions of a number of models that forecast the outcomes of interactions of same-species populations that differ in genes designed to affect population size (suppression), genetic complexity (modification) and copy number (transposon drive). The first-year objective for the NCSU subcontract is to use models to predict outcomes of introductions of transgenic mosquitoes into stable wild populations in laboratory cages. These models will be used to design the experiments for the second and third year activities, the objectives of which are to test model predictions in laboratory cage trials. Results of the empirical experiments will be used if necessary to recalibrate the models for subsequent experiments. The Gould laboratory also will be responsible for contributing to data analyses and manuscript publications in conjunction with the James' laboratory.

#### **Budget**

	Year 1	Year 2	Year 3	Cumulative
Salaries	\$ 58,965.00	\$ 60,733.00	\$ 62,556.00	\$ 182,254.00
Fringe	\$ 11,885.00	\$ 12,242.00	\$ 12,609.00	\$ 36,736.00
Travel	\$ 2,000.00	\$ 2,000.00	\$ 2,000.00	\$ 6,000.00
Total Request	\$ 72,850.00	\$ 74,975.00	\$ 77,165.00	\$ 224,990.00

#### **Budget Justification**

#### Personnel:

Fred Gould will work for one month on this project in the summer. One month of salary is requested.

Kenichi Okamoto will work full time on this project as a postdoc. The postdoc will be involved in the hands on writing of code and exploration of the model's behavior. The postdoc will partcipate in meetings about direction of the project and will be expected to develop new ideas for multilocus strategies.

Per NCSU guidelines, fringe is calculated at 30% for faculty and 17% for PostDoctoral researchers.

#### **Domestic Travel:**

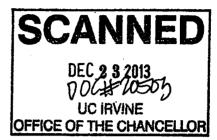
Because this will be a collaborative research project we have allocated funds for NCSU researchers to visit UCI annually. Expenses will include airfare, hotel, and per diem costs.

#### W. M. Keck Foundation

213 680-3833 www.wmkeck.org 550 South Hope Street Suite 2500 Los Angeles California 90071

December 20, 2013

Dr. Michael V. Drake Chancellor University of California, Irvine The Chancellor's Office Irvine, CA 92697-1900



#### Dear Chancellor Drake:

Thank you for submitting your proposal to the Medical Research Grant Program for consideration by the Board of Directors of the W. M. Keck Foundation during its December 2013 grant cycle. The Board of Directors recently met, and we are pleased to inform you that a grant in the amount of One Million Dollars (\$1,000,000) has been awarded to THE REGENTS OF THE UNIVERSITY OF CALIFORNIA for the project titled Evolutionary Consequences of Invasions of Novel Genotypes and Selfish Genetic Elements. This grant is being approved by the Foundation in reliance on the statements, representations, criteria, and objectives set forth in your proposal and related materials, all of which are incorporated in and made a part of this grant agreement.

Enclosed you will find our check in the amount of One Million Dollars (\$1,000,000) representing payment in full. You will also find the Foundation's *Grantee Responsibilities* and a preprinted postcard. Please acknowledge receipt of this grant payment and the *Grantee Responsibilities* by completing and returning the enclosed postcard. In accepting this award, you are consenting to comply with the Foundation's requirements for awarded grants. Furthermore, the Foundation anticipates that you will honor, as appropriate, all offers of recognition for its support that were contained in your proposal or as otherwise approved by the Foundation. The first routine written progress report on grant activities and expenditures is expected at the Foundation no later than January 31, 2015. Information about reporting procedures, deadlines, submittal, and the required reporting form for download is available on our website at <a href="http://www.wmkeck.org/grant-programs/reporting-requirements.html">http://www.wmkeck.org/grant-programs/reporting-requirements.html</a>.

#### W. M. Keck Foundation

Chancellor Drake University of California, Irvine December 20, 2013 Page 2

We are pleased to support your endeavor. Should you have any questions concerning this grant, please direct all communications to the Program Director.

Sincerely,

Robert A. Day

Chairman and Chief Executive Officer

Maria Pellegrini, Ph.D.

Executive Director of Programs

**Enclosures** 

cc:

Dr. Jacob Levin

Dr. Anthony A. James

#### W. M. Keck Foundation

#### Grantee Responsibilities

Potential applicants are advised that by submitting a request they are consenting to comply with the following requirements if a grant is awarded:

The grantee, as a condition of accepting the funds, affirms that the entire proceeds will be used to implement the charitable purposes of the project for which the grant is made. No overhead, indirect, or investment management fees may be charged to this award. The grantee further affirms that no funds have been or will be paid to neither organization nor consultants engaged in fundraising or public relations for services rendered in obtaining the grant.

Should the grantee (a) become aware that the purposes for (and or implementation of) this grant have become impracticable, (b) wish to terminate the charitable project funded, (c) wish to redirect the purpose of the grant, or (d) make a change in lead personnel, the grantee shall immediately notify the Foundation in writing. In such event, the Foundation may, in its sole discretion, among its other rights and remedies, terminate this grant and require the grantee to immediately repay to the Foundation any unspent principal and accrued interest to date of repayment.

Should the grantee wish to make alterations to the approved grant budget totaling 10% or more in any budget category, prior approval from the Foundation is required.

Grant funds shall be placed in an interest-bearing account until they are needed for the project for which the grant was made. The accrued interest must also be used only to support that project.

Written progress reports and a financial accounting on the earnings and expenditure of grant funds must be submitted to the Foundation. Report forms and schedules will be provided by the Foundation.

The grantee is to secure Foundation approval in writing prior to releasing any public announcements or statements to the media regarding the grant, referencing it in internally produced publications, or making any commitments for permanent recognition of the W.M. Keck Foundation. Foundation staff is happy to assist in developing such material. The Foundation reserves the right to publish the abstract submitted by the grantee.

If a matching grant is awarded, the grantee is required to secure the matching funds necessary to fully implement the project. Upon raising the match, the grantee is asked to provide the Foundation with a detailed accounting of the sources of the matching gifts. Government grants, bonds, the institution's endowment or other existing support do not qualify as a match.

If a grant for endowment is awarded, the principal must be maintained in perpetuity and earnings will be used solely to support the purpose for which the grant was made.

For endowed fellowships, chairs, and similar awards, the grantee is asked to provide the Foundation with periodic reports on the selection process, the progress of the search, and the names and backgrounds of those receiving the awards. However, the Foundation does not wish to influence the selection in any way.

This grant agreement is deemed to have been entered into in the County of Los Angeles, State of California; and, California law shall apply to the interpretation and enforcement of the grant provisions.

The Foundation will monitor and assess the impact of prior grants to help determine the Foundation's future program objectives.

### UNIVERSITY OF CALIFORNIA, IRVINE OFFICE OF RESEARCH ADMINISTRATION

Subaward No.:	
Reporting Period:	
Principal Investigator:	
•	INVENTION STATEMENT
Invention was was not performance of work during the	conceived or first actually reduced to practice in the subaward reporting period.
•	EQUIPMENT REPORT
Equipment was was not _	purchased during the subaward reporting period.
If equipment was purchased durin information.	g the subaward period, please provide the following
Description of the equipment item Manufacturer, model number, and Cost charged to the subaward Acquisition date	
Signature of Principal Investigator	Date
Signature of Authorizing Official	Date

#### SUBCONTRACTOR'S RELEASE

Pursuant to the terms of Subcontract Number _	under prime Grant/Con	tract
Number for the period	through	and
in consideration of the sum of		
	_ (hereinafter called the Subcontractor) or to	
assignees, if any, the Subcontractor, upon payme UNIVERSITY OF CALIFORNIA, University of C remise, release, and discharge the University, its liabilities, obligations, claims and demands whatsoev	alifornia, Irvine (hereinafter called University) officers, agents, and employees, of and from	does
IN WITNESS WHEREOF, this release has been 20	en executed this day	of
Subcontractor		
Ву		
Title		
Certificate (To be completed by an officer other than	the one certifying above.)	
I certify that I am	of the	
I certify that I am (Name of official)	(Official Title)	
corporation named as subcontractor in the foregoing r	release, that	
	(Official certifying above)	
who signed said release on behalf of the Subcontracto	or was then	
	(Official Title)	
of said corporation; that said release was duly signed authority of its governing body is within the scope of	• • •	
	· · · · · · · · · · · · · · · · · · ·	
Name and Title of Official Certifying this form)		

#### **EXHIBIT F**

	Date: _		
	Total Award Amount:		
	Voucher	Number:	
Subcontractor:			
Remittance Address:			
<del></del>			
Culturate N-			
Subcontract No.  Contractor	The December of the Heimanian Co. 110		
Contractor's Fund Number	The Regents of the University of Californ	<u>a</u>	
Period of Claim		<del></del>	
Remittance Information:		<del></del>	
Federal Tax I.D.			
Accounts Receivable Contact		<del></del>	
Telephone #			
Major Cost Elements	Current Period	Cumulative to Date	
Salaries and Wages			
Supplies and Expenses			
Equipment/Facilities	•		
Travel			
Employee Benefits			
Other			
Total Cost			
Previously Claimed			
Current Claim			
Certification:			
"I certify that all expenditures accordance with the provisions of	reported or payment requested are for the application and award documents."	appropriate purposes and in	
Date:	_ Financial Official:	•	
		(Signature)	