



[Home](#) > [Apply for Grants](#) > Confirmation

Confirmation

Thank you for submitting your grant application package via Grants.gov. Your application is currently being processed by the Grants.gov system. Once your submission has been processed, Grants.gov will send email messages to advise you of the progress of your application through the system. Over the next 24 to 48 hours, you should receive two emails. The first will confirm receipt of your application by the Grants.gov system, and the second will indicate that the application has either been successfully validated by the system prior to transmission to the grantor agency or has been rejected due to errors.

Please do not hit the back button on your browser.

If your application is successfully validated and subsequently retrieved by the grantor agency from the Grants.gov system, you will receive an additional email. This email may be delivered several days or weeks from the date of submission, depending on when the grantor agency retrieves it.

You may also monitor the processing status of your submission within the Grants.gov system by clicking on the "Track My Application" link listed at the end of this form.

Note: Once the grantor agency has retrieved your application from Grants.gov, you will need to contact them directly for any subsequent status updates. Grants.gov does not participate in making any award decisions.

IMPORTANT NOTICE: If you do not receive a receipt confirmation and either a validation confirmation or a rejection email message within 48 hours, please contact us. The Grants.gov Contact Center can be reached by email at support@grants.gov, or by telephone at 1-800-518-4726. Always include your Grants.gov tracking number in all correspondence. The tracking numbers issued by Grants.gov look like GRANTXXXXXXXXX.

If you have questions please contact the Grants.gov Contact Center: support@grants.gov
1-800-518-4726 24 hours a day, 7 days a week. Closed on federal holidays.

The following application tracking information was generated by the system:

Grants.gov Tracking Number: GRANT12175741

Applicant DUNS: 07-187-4416

Submitter's Name: Edwin Eng

CFDA Number: 84.031

CFDA Description: Higher Education_Institutional Aid

Funding Opportunity Number: ED-GRANTS-030416-002

Funding Opportunity Description: Office of Postsecondary Education (OPE): : Hispanic-Serving Institutions STEM and Articulation Program CFDA Number 84.031C

Agency Name: U.S. Department of Education

Application Name of this Submission: Reedley College H.S.I. STEM FY 2016

Date/Time of Receipt: May 31, 2016 01:59:45 PM EDT

TRACK MY APPLICATION – To check the status of this application, please click the link below:
http://www.grants.gov/web/grants/applicants/track-my-application.html?tracking_num=GRANT12175741

It is suggested you Save and/or Print this response for your records.

Cherylyn Crill-Hornsby

From: DoNotReply@grants.gov
Sent: Tuesday, May 31, 2016 11:00 AM
To: Grants Sub
Subject: GRANT12175741 Grants.gov Submission Validation Receipt for Application

Your application has been received and validated by Grants.gov and is being prepared for Grantor agency retrieval.

DUNS Number: 0718744160000

AOR name: Edwin Eng

Application Name: Reedley College H.S.I. STEM FY 2016

Opportunity Number: ED-GRANTS-030416-002

Opportunity Name: Office of Postsecondary Education (OPE): : Hispanic-Serving Institutions STEM and Articulation Program CFDA Number 84.031C

<https://apply07.grants.gov/apply/login.faces?cleanSession=1&userType=applicant>

You will be notified via email when your application has been retrieved by Grantor agency.

Thank you.

Grants.gov

If you have questions please contact the Grants.gov Contact Center:

support@grants.gov

1-800-518-4726

24 hours a day, 7 days a week. Closed on federal holidays.

PLEASE NOTE: This email is for notification purposes only. Please do not reply to this email for any purpose.

APPLICATION CHECKLIST

Use This Checklist While Preparing Your Application Package: All items listed on this checklist are required.

- Application for Federal Assistance (SF 424)
- Department of Education Supplemental Information for SF 424 *Dr Heathcote*
- Department of Education Budget Information Non-Construction Programs Form (ED 524)
- One-Page Program Abstract – Attached to the “ED Abstract Form” in Grants.gov
- Project Narrative – Attached to the “Project Narrative Attachment Form” in Grants.gov
- Budget Narrative – Attached to the “Budget Narrative Attachment Form” in Grants.gov
- Additional Appendices, if applicable – Attached to the “Other Attachments Form” in Grants.gov
- Assurances and Certifications – found in Grants.gov
 - Assurances for Non-Construction Programs (SF-424B) *CV-Dr Heathcote*
 - Grants.gov Lobbying Form (ED 80-0013) *Dr Hernandez*
 - Disclosure of Lobbying Activities (SF-LLL) *LOS - CSUF*
 - ED GEPA 427 Form

Grant Application Package

Opportunity Title:	Office of Postsecondary Education (OPE) : : Hispanic-Ser
Offering Agency:	U.S. Department of Education
CFDA Number:	84.031
CFDA Description:	Higher Education Institutional Aid
Opportunity Number:	ED-GRANTS-030416-002
Competition ID:	84-031C2016-1
Opportunity Open Date:	03/04/2016
Opportunity Close Date:	05/31/2016
Agency Contact:	Everardo Gil Education Program Specialist E-mail: everardo.gil@ed.gov Phone: 202-453-7712 Jeffrey Hartman

This opportunity is only open to organizations, applicants who are submitting grant applications on behalf of a company, state, local or tribal government, academia, or other type of organization.

Application Filing Name: Reedley College H.S.I. STEM FY 2016

Select Forms to Complete

Mandatory

[Application for Federal Assistance \(SF-424\)](#)

[U.S. DEPARTMENT OF EDUCATION BUDGET INFORMATION NON-CONSTRUCTION PROGRAMS](#)

[Assurances for Non-Construction Programs \(SF-424B\)](#)

[Grants.gov Lobbying Form](#)

[Disclosure of Lobbying Activities \(SF-LLL\)](#)

[ED GEPA427 Form](#)

[ED SF424 Supplement](#)

[ED Abstract Form](#)

[Project Narrative Attachment Form](#)

[Budget Narrative Attachment Form](#)

[Other Attachments Form](#)

Optional

Instructions

[Show Instructions >>](#)

This electronic grants application is intended to be used to apply for the specific Federal funding opportunity referenced here. If the Federal funding opportunity listed is not the opportunity for which you want to apply, close this application package by clicking on the "Cancel" button at the top of this screen. You will then need to locate the correct Federal funding opportunity, download its application and then apply.

Application for Federal Assistance SF-424

* 1. Type of Submission: <input type="checkbox"/> Preapplication <input checked="" type="checkbox"/> Application <input type="checkbox"/> Changed/Corrected Application	* 2. Type of Application: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision	* If Revision, select appropriate letter(s): _____ * Other (Specify): _____
---	---	--

* 3. Date Received: Completed by Grants.gov upon submission.	4. Applicant Identifier: _____
--	--

5a. Federal Entity Identifier: _____	5b. Federal Award Identifier: _____
--	---

State Use Only:

6. Date Received by State: _____	7. State Application Identifier: _____
---	---

8. APPLICANT INFORMATION:

* a. Legal Name: Reedley College	
* b. Employer/Taxpayer Identification Number (EIN/TIN): 94-1574802	* c. Organizational DUNS: 0718744160000

d. Address:

* Street1: 995 N. Reed Street.
Street2: _____
* City: Reedley
County/Parish: _____
* State: CA: California
Province: _____
* Country: USA: UNITED STATES
* Zip / Postal Code: 93654-2017

e. Organizational Unit:

Department Name: _____	Division Name: _____
----------------------------------	--------------------------------

f. Name and contact information of person to be contacted on matters involving this application:

Prefix: Dr.	* First Name: Sandra
Middle Name: _____	
* Last Name: Caldwell	
Suffix: _____	
Title: President, Reedley College	

Organizational Affiliation:

* Telephone Number: (559) 638-0300 ext. 3202	Fax Number: (800) 643-1762
---	-----------------------------------

*** Email:** sandra.caldwell@reedleycollege.edu

Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

S: Hispanic-serving Institution

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

U.S. Department of Education

11. Catalog of Federal Domestic Assistance Number:

84.031

CFDA Title:

Higher Education_Institutional Aid

*** 12. Funding Opportunity Number:**

ED-GRANTS-030416-002

* Title:

Office of Postsecondary Education (OPE): : Hispanic-Serving Institutions STEM and Articulation Program CFDA Number 84.031C

13. Competition Identification Number:

84-031C2016-1

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment

Delete Attachment

View Attachment

*** 15. Descriptive Title of Applicant's Project:**

Reedley College, Hispanic Serving Institution - Science, Technology, Engineering, & Mathematics Program, FY 2016

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant

* b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

17. Proposed Project:

* a. Start Date:

* b. End Date:

18. Estimated Funding (\$):

* a. Federal	<input type="text" value="1,013,421.00"/>
* b. Applicant	<input type="text" value="0.00"/>
* c. State	<input type="text" value="0.00"/>
* d. Local	<input type="text" value="0.00"/>
* e. Other	<input type="text" value="0.00"/>
* f. Program Income	<input type="text" value="0.00"/>
* g. TOTAL	<input type="text" value="1,013,421.00"/>

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

- a. This application was made available to the State under the Executive Order 12372 Process for review on
- b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

- Yes No

If "Yes", provide explanation and attach

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix: * First Name:

Middle Name:

* Last Name:

Suffix:

* Title:

* Telephone Number: Fax Number:

* Email:

* Signature of Authorized Representative: * Date Signed:

**U.S. DEPARTMENT OF EDUCATION
BUDGET INFORMATION
NON-CONSTRUCTION PROGRAMS**

OMB Number: 1894-0008
Expiration Date: 06/30/2017

Name of Institution/Organization

Reedley College

Applicants requesting funding for only one year should complete the column under "Project Year 1." Applicants requesting funding for multi-year grants should complete all applicable columns. Please read all instructions before completing form.

**SECTION A - BUDGET SUMMARY
U.S. DEPARTMENT OF EDUCATION FUNDS**

Budget Categories	Project Year 1 (a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel	309,537.00	316,290.00	325,554.00	335,085.00	344,800.00	1,631,266.00
2. Fringe Benefits	68,384.00	73,579.00	79,831.00	86,530.00	91,505.00	399,829.00
3. Travel	71,000.00	71,000.00	71,000.00	71,000.00	71,000.00	355,000.00
4. Equipment	199,900.00	125,500.00	214,500.00	342,500.00	196,500.00	1,078,900.00
5. Supplies	149,600.00	154,600.00	154,600.00	149,600.00	149,600.00	758,000.00
6. Contractual	25,000.00	20,000.00	20,000.00	20,000.00	20,000.00	105,000.00
7. Construction	0.00	0.00	0.00	0.00	0.00	0.00
8. Other	190,000.00	175,000.00	225,000.00	175,000.00	100,000.00	865,000.00
9. Total Direct Costs (lines 1-8)	1,013,421.00	935,969.00	1,090,485.00	1,179,715.00	973,405.00	5,192,995.00
10. Indirect Costs*	0.00	0.00	0.00	0.00	0.00	0.00
11. Training Stipends	0.00	0.00	0.00	0.00	0.00	0.00
12. Total Costs (lines 9-11)	1,013,421.00	935,969.00	1,090,485.00	1,179,715.00	973,405.00	5,192,995.00

***Indirect Cost Information (To Be Completed by Your Business Office):**

If you are requesting reimbursement for indirect costs on line 10, please answer the following questions:

(1) Do you have an Indirect Cost Rate Agreement approved by the Federal government? Yes No

(2) If yes, please provide the following information:

Period Covered by the Indirect Cost Rate Agreement: From: To: (mm/dd/yyyy)

Approving Federal agency: ED Other (please specify):

The Indirect Cost Rate is %.

(3) If this is your first Federal grant, and you do not have an approved indirect cost rate agreement, are you a State, Local government or Indian Tribe, and are not funded under a training rate program or a restricted rate program, do you want to use the de minimis rate of 10% of MTDC? Yes No If yes, you must comply with the requirements of 2 CFR § 200.414(f).

(4) If you do not have an approved indirect cost rate agreement, do you want to use the temporary rate of 10% of budgeted salaries and wages? Yes No

(5) For Restricted Rate Programs (check one) – Are you using a restricted indirect cost rate that: Is included in your approved Indirect Cost Rate Agreement? Or, Complies with 34 CFR 76.564(c)(2)? The Restricted Indirect Cost Rate is %.

Name of Institution/Organization

Reedley College

Applicants requesting funding for only one year should complete the column under "Project Year 1." Applicants requesting funding for multi-year grants should complete all applicable columns. Please read all instructions before completing form.

**SECTION B - BUDGET SUMMARY
NON-FEDERAL FUNDS**

Budget Categories	Project Year 1 (a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel						
2. Fringe Benefits						
3. Travel						
4. Equipment						
5. Supplies						
6. Contractual						
7. Construction						
8. Other						
9. Total Direct Costs (lines 1-8)						
10. Indirect Costs						
11. Training Stipends						
12. Total Costs (lines 9-11)						

SECTION C - BUDGET NARRATIVE (see instructions)

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee- 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.
10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.
19. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	TITLE
Completed on submission to Grants.gov	Vice Chancellor, Finance & Administration
APPLICANT ORGANIZATION	DATE SUBMITTED
Reedley College	Completed on submission to Grants.gov

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an 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.

(2) If any funds other than Federal appropriated funds have been paid or will be paid 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 this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification 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. 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 section 1352, title 31, U.S. Code. 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.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been paid or will be paid 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 this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions. Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

*** APPLICANT'S ORGANIZATION**

Reedley College

*** PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE**

Prefix: Mr. * First Name: Edwin Middle Name:

* Last Name: Eng Suffix:

* Title: Vice Chancellor, Finance & Administration

* SIGNATURE: Completed on submission to Grants.gov

* DATE: Completed on submission to Grants.gov

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

Approved by OMB
0348-0046

1. * Type of Federal Action: <input type="checkbox"/> a. contract <input checked="" type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	2. * Status of Federal Action: <input type="checkbox"/> a. bid/offer/application <input checked="" type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	3. * Report Type: <input checked="" type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change
--	--	--

4. Name and Address of Reporting Entity:
 Prime SubAwardee

* Name:

* Street 1: Street 2:

* City: State: Zip:

Congressional District, if known:

5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:

6. * Federal Department/Agency: <input type="text" value="NA"/>	7. * Federal Program Name/Description: <input type="text" value="Higher Education_Institutional Aid"/> CFDA Number, if applicable: <input type="text" value="84.031"/>
---	---

8. Federal Action Number, if known: <input type="text"/>	9. Award Amount, if known: \$ <input type="text"/>
--	--

10. a. Name and Address of Lobbying Registrant:

Prefix: * First Name: Middle Name:

* Last Name: Suffix:

* Street 1: Street 2:

* City: State: Zip:

b. Individual Performing Services (including address if different from No. 10a)

Prefix: * First Name: Middle Name:

* Last Name: Suffix:

* Street 1: Street 2:

* City: State: Zip:

11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

* Signature:

* Name: Prefix: * First Name: Middle Name:

* Last Name: Suffix:

Title: Telephone No.: Date:

NOTICE TO ALL APPLICANTS

OMB Number: 1894-0005
Expiration Date: 03/31/2017

The purpose of this enclosure is to inform you about a new provision in the Department of Education's General Education Provisions Act (GEPA) that applies to applicants for new grant awards under Department programs. This provision is Section 427 of GEPA, enacted as part of the Improving America's Schools Act of 1994 (Public Law (P.L.) 103-382).

To Whom Does This Provision Apply?

Section 427 of GEPA affects applicants for new grant awards under this program. **ALL APPLICANTS FOR NEW AWARDS MUST INCLUDE INFORMATION IN THEIR APPLICATIONS TO ADDRESS THIS NEW PROVISION IN ORDER TO RECEIVE FUNDING UNDER THIS PROGRAM.**

(If this program is a State-formula grant program, a State needs to provide this description only for projects or activities that it carries out with funds reserved for State-level uses. In addition, local school districts or other eligible applicants that apply to the State for funding need to provide this description in their applications to the State for funding. The State would be responsible for ensuring that the school district or other local entity has submitted a sufficient section 427 statement as described below.)

What Does This Provision Require?

Section 427 requires each applicant for funds (other than an individual person) to include in its application a description of the steps the applicant proposes to take to ensure equitable access to, and participation in, its Federally-assisted program for students, teachers, and other program beneficiaries with special needs. This provision allows applicants discretion in developing the required description. The statute highlights six types of barriers that can impede equitable access or participation: gender, race, national origin, color, disability, or age. Based on local circumstances, you should determine whether these or other barriers may prevent your students, teachers, etc. from such access or participation in, the Federally-funded project or activity. The description in your application of steps to be taken to overcome these barriers need not be lengthy; you may provide a clear and succinct description of how you plan to address those barriers that are applicable to your circumstances. In addition, the information may be provided in a single narrative, or, if appropriate, may

be discussed in connection with related topics in the application.

Section 427 is not intended to duplicate the requirements of civil rights statutes, but rather to ensure that, in designing their projects, applicants for Federal funds address equity concerns that may affect the ability of certain potential beneficiaries to fully participate in the project and to achieve to high standards. Consistent with program requirements and its approved application, an applicant may use the Federal funds awarded to it to eliminate barriers it identifies.

What are Examples of How an Applicant Might Satisfy the Requirement of This Provision?

The following examples may help illustrate how an applicant may comply with Section 427.

(1) An applicant that proposes to carry out an adult literacy project serving, among others, adults with limited English proficiency, might describe in its application how it intends to distribute a brochure about the proposed project to such potential participants in their native language.

(2) An applicant that proposes to develop instructional materials for classroom use might describe how it will make the materials available on audio tape or in braille for students who are blind.

(3) An applicant that proposes to carry out a model science program for secondary students and is concerned that girls may be less likely than boys to enroll in the course, might indicate how it intends to conduct "outreach" efforts to girls, to encourage their enrollment.

(4) An applicant that proposes a project to increase school safety might describe the special efforts it will take to address concern of lesbian, gay, bisexual, and transgender students, and efforts to reach out to and involve the families of LGBT students.

We recognize that many applicants may already be implementing effective steps to ensure equity of access and participation in their grant programs, and we appreciate your cooperation in responding to the requirements of this provision.

Estimated Burden Statement for GEPA Requirements

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. Public reporting burden for this collection of information is estimated to average 1.5 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit (Public Law 103-382). Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20210-4537 or email ICDocketMgr@ed.gov and reference the OMB Control Number 1894-0005.

Optional - You may attach 1 file to this page.

GEPA_Statement.pdf	Add Attachment	Delete Attachment	View Attachment
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REEDLEY COLLEGE

H.S.I. STEM Program

Reedley College “H.S.I. STEM” Program targets areas and schools that have a high Hispanic population who come from households where they are the first-generation U.S. residents or citizens. All information disseminated by this project will be made available in a variety of formats for participants with varying learning needs. All web-based information will be fully accessible. Additionally, current and future faculty will learn how to diversify their materials and teaching strategies and make course web sites more accessible for students with disabilities.

In addition to the above, Reedley College “H.S.I. STEM” Program will ensure that all program participants have equal access and receive the high quality of service from the program. All documents, flyers, and information regarding the program will have the following statement: **“Reedley College H.S.I. STEM Program does not discriminate on the basis of race, color, national origin, religion, sex, age, or disability in any of its policies, procedures, or practices.”** A diversity of services will be implemented to attract and maintain interest of students at target area and schools.

U.S. DEPARTMENT OF EDUCATION
SUPPLEMENTAL INFORMATION
FOR THE SF-424

OMB Number: 1894-0007
Expiration Date: 08/31/2017

1. Project Director:

Prefix: Dr.	First Name: John	Middle Name:	Last Name: Heathcote	Suffix:
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Address:

Street1:	995 N. Reed Street
Street2:	
City:	Reedley
County:	
State:	CA: California
Zip Code:	93654-2017
Country:	USA: UNITED STATES

Phone Number (give area code) Fax Number (give area code)

(559) 638-0300 ext. 3215	
--------------------------	--

Email Address:

john.heathcote@reedleycollege.edu

2. Novice Applicant:

Are you a novice applicant as defined in the regulations in 34 CFR 75.225 (and included in the definitions page in the attached instructions)?

Yes No Not applicable to this program

3. Human Subjects Research:

a. Are any research activities involving human subjects planned at any time during the proposed Project Period?

Yes No

b. Are ALL the research activities proposed designated to be exempt from the regulations?

Yes Provide Exemption(s) #: 1 2 3 4 5 6

No Provide Assurance #, if available:

--

c. If applicable, please attach your "Exempt Research" or "Nonexempt Research" narrative to this form as indicated in the definitions page in the attached instructions.

	Add Attachment	Delete Attachment	View Attachment
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Abstract

The abstract narrative must not exceed one page and should use language that will be understood by a range of audiences. For all projects, include the project title (if applicable), goals, expected outcomes and contributions for research, policy, practice, etc. Include population to be served, as appropriate. For research applications, also include the following:

- Theoretical and conceptual background of the study (i.e., prior research that this investigation builds upon and that provides a compelling rationale for this study)
- Research issues, hypotheses and questions being addressed
- Study design including a brief description of the sample including sample size, methods, principals dependent, independent, and control variables, and the approach to data analysis.

[Note: For a non-electronic submission, include the name and address of your organization and the name, phone number and e-mail address of the contact person for this project.]

You may now Close the Form

You have attached 1 file to this page, no more files may be added. To add a different file, you must first delete the existing file.

* Attachment:



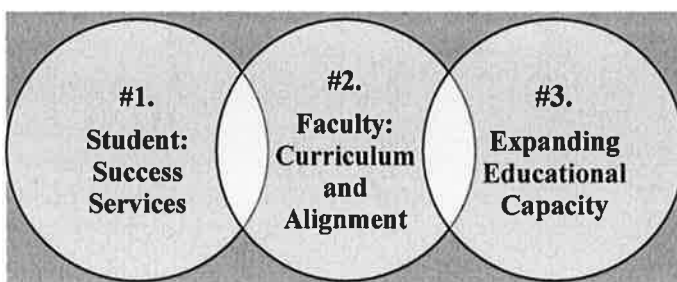
PROJECT TITLE: *Student Transfer, Engagement, and Mentoring For Science, Technology, Engineering, Math (STEM-4-STEM)*

PARTNER INSTITUTION(S): *Reedley College, Madera Community College Center, & California State University, Fresno*

TARGET AREA TO BE SERVED: *Fresno and Madera Counties, California*

POPULATION TO BE SERVED: *Hispanic and Low Income students*

SERVICES TO BE PROVIDED: Reedley College STEM-4-STEM will establish comprehensive student-centered services and curricular programs that will increase the rates of remediation, retention, degree completion, and transfer in STEM fields of study. This will be accomplished through three primary activity components:



ASSOCIATED SERVICES	
Students	Tutorial and counseling, mentoring, course placement & acceleration
Faculty	Curricular alignment (between community college and four year partner), professional development
Capacity	Improved laboratory sciences (number of course offered , instrumentation, and space)

Based on these activities and services, these **goals** and expected **outcomes** will be achieved:

GOALS	OUTCOMES
<i>Success services through intensive interventions</i>	<ul style="list-style-type: none"> Increased the number of Hispanic and Low Income stds in STEM degrees seeking majors by 25% First time, full-time STEM major, Hispanic and low-income students retention will increase by 25% from Fall to Fall Increased the annual number of STEM related degrees awarded by 50%
<i>Increased curriculum and discipline alignment</i>	<ul style="list-style-type: none"> Beginning 2018, increase the number of transfers in STEM fields by 30% over the 2014-15 baseline. Develop 2 new STEM degree programs, articulated for transfer/minimum of 20 new articulated courses.

CCC H.S.I. STEM will address Competitive Preference Priority 2 –

Cited Study for Project Development

Scrivener, S., Weiss, M. J., Ratledge, A., Rudd, T., Sommo, C., & Fresques, H. (2015). *Doubling graduation rates: Three-year effects of CUNY's Accelerated Study in Associate Programs (ASAP) for developmental education students*. New York: MDRC.

Link: <http://ies.ed.gov/ncee/wwc/quickreview.aspx?sid=20155>


Project Narrative File(s)

* **Mandatory Project Narrative File Filename:**

To add more Project Narrative File attachments, please use the attachment buttons below.

STEM-4-STEM!
*STUDENT TRANSFER, ENGAGEMENT, AND MENTORING
 FOR SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH*

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STEM-4-STEM!

“Faculty took the lead in researching changes that need to be made in order to increase the number and success of Hispanic and low income students majoring in STEM. Being a person with an undergraduate degree in Math, I personally understand the demands of completing a STEM degree. I pledge that the entire college administration and staff stand ready to join the faculty in making changes to address the needs of our students.”

Dr. Sandra Caldwell, Reedley College President

COMPETITIVE PREFERENCE PRIORITY #2

H.S.I. STEM – Cited Study for Project Development

Scrivener, S., Weiss, M. J., Ratledge, A., Rudd, T., Sommo, C., & Fresques, H. (2015). *Doubling graduation rates: Three-year effects of CUNY’s Accelerated Study in Associate Programs (ASAP) for developmental education students*. New York: MDRC.

Links(s): <http://ies.ed.gov/ncee/wwc/quickreview.aspx?sid=20155> and <http://files.eric.ed.gov/fulltext/ED558511.pdf>

Activities/Interventions and Associated Outcomes

The Reedley College H.S.I. STEM grant development team has selected the Accelerated Study in Associate Program (ASAP), based in the City University of New York (CUNY) system as an example of “*moderate evidence of effectiveness*” in improving student educational outcomes in a manner which their own campus would like to replicate. This study demonstrated significant alignment in institutional type, student population served, needs and goals addressed, and methodology with Reedley College H.S.I. STEM activities proposed as a result of this review. The CUNY cited study included six large, public, urban community colleges as its primary intervention locations and sought to increase both retention and graduation rates through a comprehensive program of services. The study’s intervention offerings were designed to address multiple challenges faced by students, and provided them with an array of supports to address common barriers to their educational success.

ASAP program participants were low income, required developmental coursework, had previously completed a small number of college credits (12 or fewer), and were part of a major that was program eligible. Prior to beginning the program, participants completed a baseline



survey which assisted in describing their demographic background. This information provided ASAP staff with details that were helpful in later analysis of the study's findings.

While the broad range of interventions created difficulties in ascribing the effects of a particular service to the positive outcomes ASAP participants experienced, it is clear that the cumulative effects of the program created a strong argument to implement similar interventions at institutions looking to effect comparable outcomes for related student populations. ASAP demonstrated a statistically significant impact in the following outcomes areas which are also relevant to the Reedley College STEM-4-STEM program:

- ***Coordinated student services delivery leading to excellent participant success rates*** (74% of ASAP students engaged in tutoring versus 39% of non-participants; 95% of ASAP students met with advisor within first year versus 80% of non-participants);
- ***Substantial improvements in academic success*** (graduation rates that almost doubled, 18.3% more degrees earned, 7.8% more students enrolled in four-year colleges);
- ***Improved enrollment rates*** (substantial increases in three year graduation rates and accumulated credits compared to control group over the study period);

Interventions from the ASAP study were examined by the Reedley College STEM-4-STEM grant development team for effectiveness, process, product, strategy, and activities. RC serves community college students who are commonly low income (59%)¹ with a significant number requiring developmental courses in order to progress to college level classes (76% of incoming Hispanic students placed into remedial levels of mathematics, 54% placed into remedial reading, and 77% placed into remedial writing courses)². As with the ASAP program,

¹ SCCC Institutional Research

² SCCC Institutional Research



STEM-4-STEM seeks to effect the remediation, retention, and graduation rates of students in a specific set of fields (those related to Mathematics, Sciences, and Engineering). Based on the primary interventions of ASAP, the following STEM-4-STEM activities were developed:

<i>STEM-4-STEM Activities (ASAP Based)</i>	<i>Cited ASAP Study Alignment</i>	<i>STEM-4-STEM Student Outcomes</i>
Intensive Student Services: advising, career services, and tutoring.	<i>Intensive ASAP services emphasized student engagement in developmental coursework early in their college careers</i> through ongoing and effective staff communication.	Early completion of developmental courses.
<u>STEM-4-STEM Objectives Effected:</u>		
<ul style="list-style-type: none"> • OBJECTIVE 1: Increase Hispanic and Low income STEM Degree Seeking Majors 		
Course Scheduling and Seminar: course sequencing for project participants and STEM-4-STEM program orientations.	<i>ASAP participant graduation rates were almost doubled over a three year period through block or linked course scheduling early in program, and program orientation seminar.</i> Emphasis on graduation within three years regularly communicated by ASAP program staff.	Graduation from program within three years. Transfer to four-year colleges.
<u>STEM-4-STEM Objectives Effected:</u>		
<ul style="list-style-type: none"> • OBJECTIVE 3: Increase Number of STEM Degrees • OBJECTIVE 4: Increase STEM Transfers to Four-Year Institutions • OBJECTIVE 5: Increase STEM Articulations to Four-Year Institutions 		
Financial supports: tuition waivers, and free text books.	<i>ASAP linked the receipt of financial supports to student participation in study services, such as advising, increasing intersession and full-time student enrollments</i> and also demonstrated higher numbers of student credits earned by participants.	Retention of students from fall-to-fall annually.
Counseling and tutorial services will be staffed for STEM-4-STEM.	<i>ASAP program services were exclusively staffed for the project and not blended with other college services.</i>	
<u>STEM-4-STEM Objectives Effected:</u>		
<ul style="list-style-type: none"> • OBJECTIVE 2: Retention of Hispanic and Low income Student Majoring in STEM 		

Intervention Modifications

The following modifications to the ASAP study have been noted as necessary due to the setting, population, or services proposed by the STEM-4-STEM program:

<i>ASAP Intervention</i>	<i>STEM-4-STEM Modification</i>	<i>Justification for Modification</i>
Full-Time Enrollment.	Full-time and part-time students will be included in the project.	Due to the nature of community college student's enrollments, exclusion of part-time students would preclude the projects ability to reach a significant portion of our population. However, full-time enrollment will be encouraged by STEM-4-STEM staff.



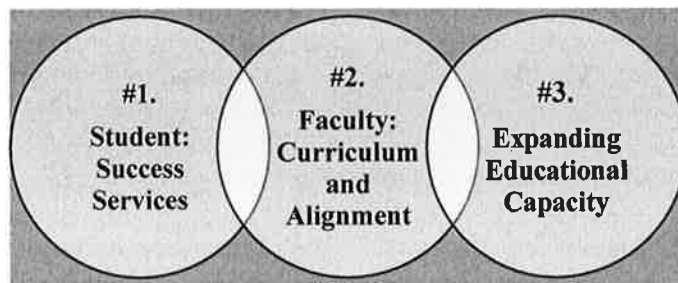
Intensive Student Services.	Intensive Students Services PLUS Mentoring Activities.	STEM-4-STEM will enhance the recommended program services in ASAP by adding a student mentoring component including both faculty and regional industry mentors.
Block or linked course scheduling.	Sequential course scheduling.	Reedley College will use extensive Student Educational Planning (SEP) development to ensure project participants are advised for/enrolled in a sequential set of courses for their major in order to ensure accelerated completion of their educational program.
Transportation expenses covered.	<i>Not provided.</i>	Due to the rural nature of Reedley College's location, centralized transportation services such as those provided by the ASAP study are not available. Alternative transportation options are too costly for grant funding.

H.S.I. STEM Evidence Based Intervention – Significant Activities

The ASAP model represents of a substantial portion of the planned Reedley College STEM-4-STEM program activities; project goals, outcomes, and objectives are directly related to significant findings of the ASAP model. Research planned for this project will help to determine how effective these activities are in a non-urban environment, where a majority of the participants will be Hispanic students.

STEM-4-STEM ACTIVITY: *Reedley College STEM-4-STEM will establish comprehensive student-centered services and curricular programs that will increase the rates of remediation, retention, degree completion, and transfer in STEM fields of study.*

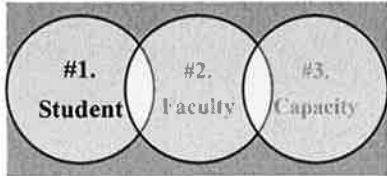
This will be accomplished through three primary activity components:



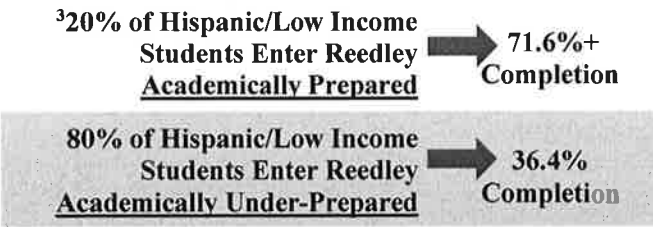


ABSOLUTE PRIORITIES

Absolute Priority 1: *Tutoring, counseling, and student service programs designed to improve academic success, including innovative and customized instruction courses designed to help retain students/move students rapidly into core courses and through program completion.*



Retention and graduation rates are low for Reedley College students who enter the institution underprepared to take college-level courses, leading to very low completion rates:



The STEM-4-STEM proposal addresses deficiencies in precollege levels of Math and English, which are barriers to progression of high need, primarily Hispanic and low-income students to complete degrees and certificates.

STEM-4-STEM, a faculty led project, develops and implements instructional innovations and evidence-based student support strategies for increasing the number of Hispanic and low income students who will be either college-ready upon enrollment or who will be successful in completing developmental levels of math and English. Interventions will ensure that students enter college-credit courses quickly, especially in STEM disciplines.

Strategies are grouped by intervention type, below; all are designed to retain students in the STEM-4-STEM project and to move them rapidly to their academic programs completion.

Tutoring Strategies	
Peer Tutors: Tutors will be embedded within pilot sections of acceleration and cross-curricular paired courses as well as within the First-Year Experience (FYE) cohort courses.	
Supplemental Instruction (SI): A peer guided tutorial review with small groups of students; sessions provide extra assistance with difficult concepts and course materials and instruction.	
Counseling Strategies	
STEM- 4- STEM Counselor/Coordinator: Counselor will work with student supportive services and faculty to identify students who need additional support/STEM focused counseling; will refer students to resources in tutorial, writing, and math centers, and computer labs.	

³ RC Institutional Researcher 2015



All entering students will be counseled to enroll in both **English and math courses their first semester/year** in order to better prepare them for college level courses; Math and English courses are gateway courses that lead to greater success in transfer level courses. The program will ensure that students are addressing critical core courses first before enrolling in advanced courses that require these fundamental skills for successful completion.

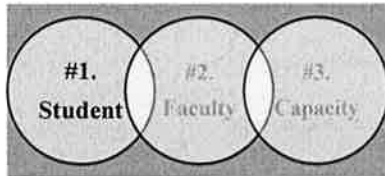
Innovative and Customized Instruction Courses

Acceleration Strategies: With the goal of increasing numbers of our students who complete college-level ‘gatekeeper’ courses, acceleration reduces the length of time required to progress through pre-college sequences and provides significant supports at common student “exit points”. One successful acceleration strategy is to combine two lower level math courses into one course, taught by a trained acceleration instructor and supported by SI.

Cross-Curricular Course Pairings: By allowing students to focus on one challenging course at a time, success rates are increased (18 weeks of simultaneous enrollment in math and chemistry versus 9 weeks of math, followed by 9 weeks of chemistry). Student in the paired courses get the math foundation needed to succeed and will be provided with SI/tutoring.

Absolute Priority 2: 1) Increase the number of Hispanic and other low income students attaining degrees in the fields of science, technology, engineering, or mathematics; and 2) develop model transfer and articulation agreements between two-year HSIs and four-year institutions in such fields.

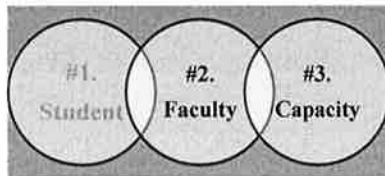
Hispanic and Low Income Student Degree Attainment



The five-year objectives of this project will increase the number of Hispanic and low income students attaining degrees in STEM fields. The proposed project will seek to use peer

based tutorial and ambassador programs to encourage students to see their own success in others. In addition, participants will be engage by both faculty and industry mentorships that will increase their familiarity with available career and academic possibilities. Finally, Hispanic and low income students who participate in the project will have access to internship opportunities that will allow them a hands-on method to explore STEM careers.

Comprehensive Articulation to Produce Agreements



The project will develop model articulation and Associate Degree for Transfer (ADT) agreements based on collaborative review of course outlines, review of programs of study, review

of comparable courses and programs throughout the state, investigation of Career Pathways templates along with secondary and transfer career pathways design. This process will involve faculty, support staff, and administrators, preparation for Curriculum Committee, new program proposals, and review and approval through administrative channels.

Detailed input from STEM department faculty demonstrates the level of work to be done in the areas of program strengthening, adding curriculum, and improving articulation. In order to guide this process STEM-4-STEM will employ an Adjunct STEM Counselor to act as an Articulation Officer for the project, ensuring consistency, transparency, and efficiency in this work which is based on current and ongoing efforts.

Alignment Partnerships: Through a partnership with California State University, Fresno (CSUF) RC faculty will work with their university counterparts in aligning curriculum and pedagogy to facilitate articulation and transfer. Capitalizing on work already done by faculty in creating ADTs, the project will focus first on alignment of the Mathematics course and degree sequences. Math courses represent both the gateway to all STEM fields and often also the first hurdle to student progress. Science (Biology, Chemistry), Engineering, and Physics alignment will follow. Discipline faculty from community college and CSU institutional partners will collaborate to review standards and align curricula, align use of technology, and discuss best practices/pedagogy for instruction. Any proposed curricular changes will then be completed via institutional curriculum approval processes. The project will create seamless transfers from RC to CSUF for STEM students, increasing STEM transfers at the university.

CC/CSU Alignment Partnership
Faculty Discipline Partnerships
Review CC and CSU Curriculum
Align Curriculum
Shared Pedagogy/Best Practices
Revise Curriculum and Schedule New Classes
Review Data on Impact (Student Success and Transfer Rates)



CSUF DISCOVERe Tablet Program: Four-year partner, CSUF, has begun using tablets and apps to their STEM instruction programs as part of their DISCOVERe initiative.

CSUF has invited RC faculty to learn pedagogical best practices for tablet use. Several faculty members from RC and have volunteered to work on this

initiative to use technology in support of a seamless

STEM education. These STEM “tablet champions”

would be the first engaged in the curriculum alignment

projects and will lead RC campus training for faculty members on using tablets and apps as part

of STEM instruction in coordination with the DISCOVERe professional development program.

RC Faculty Tablet Champions	Discipline
Dr. John Heathcote	Engineering
Jim Gilmore	Mathematics
Lina Obeid	Mathematics
Maria Ortiz	Mathematics
Joseph Lin	Biology

Outcomes of the STEM Conference
Educate Students about Careers in STEM fields.
Provide seamless degree pathways from RC to CSUF
RC and CSU faculty create partnerships with regional STEM industry partners.
Increase the number of Hispanic and low income students declaring STEM majors.
Expose first generation students and parents to college and career opportunities in STEM.

Central Valley STEM Conference: A capstone project jointly offered by RC and CSUF, faculty leaders and partners would put on this conference to educate students about STEM careers and seamless transfers from RC to CSUF. There is no such conference available for students in our service area.

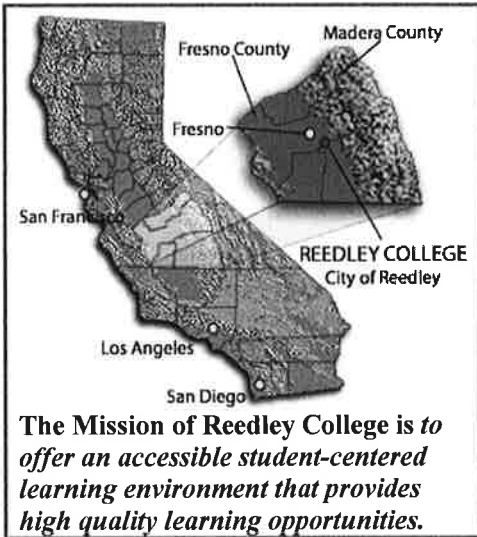
SECTION I: QUALITY OF PROJECT DESIGN

Introduction to College and High Need Hispanic Service Area: Reedley College (RC), an associate degree-granting institution of State Center Community College District (SCCCD), is located in the rural community of Reedley in Fresno County, California. *The RC Campus and associated Centers enrollment for Fall 2015 was 10,473 of which Hispanics comprised 68% (7,180).*⁴ Fresno County has a high number of foreign born residents compared to the rest of California at 13.1% of the population compared to 7.5% statewide. Reedley

⁴ SCCC Institutional Research



College’s rapidly growing college center in Madera, 60 miles north of the main campus is the only higher educational opportunity in Madera County. **RC’s Madera Community College Center (MC) enrollments in Fall 2015 were 2,942 students with, 70% (2,047) Hispanic⁵.**



High Number of Low income Students at

Reedley College: During the 2014-2015 academic year, 3,701 or 59% of RC students applied for financial aid and/or were recipients of Pell Grants. Pell Grants are awarded to students who have a demonstrated financial need based on multiple criteria. This level of financial need is comparable to the low income levels established by the U.S. Department of Education.

Although the RC main campus and its growing MC are 60 miles apart, staff and H.S.I. STEM proposal teams have worked together to jointly infuse new practices into programs and better serve Hispanic and low income students majoring in STEM fields in their program areas.

High Level of Industry Need for STEM Majors: California represents more than 13% of the nation’s overall STEM workforce but lags behind in the preparation for students in high-skill job areas; placing among the five lowest performing states in math and science proficiency⁶. Regional demand for these STEM job skills includes those noted on the following page:

STEM Related Central Valley Industries	
Industry	Job Titles
Healthcare	Registered Nurses, Physician Assistants, Nurse Practitioners, Family and General Practitioners, Surgical Technologists, Dental Hygienists
High Speed Rail	Civil Engineers, Software Developers, System Analysts, Computer Programmers
Manufacturing	Mechanical Engineers, Electrical Engineers, Computer Engineers.

⁵ SCCC Institutional Research
⁶ <http://www.cslnet.org/our-agenda/what-is-stem/>

(1) The extent to which the design of the proposed project is appropriate to, and will successfully address, the needs of the target population or other identified needs.

Through a process of reviewing both qualitative and quantitative data the college has identified several needs which have informed the activities proposed in this grant, noted below.

Low Placement of Students in transfer level Mathematics (gatekeeper courses): RC

has a complicated basic skills math sequence with too many student “exit points”. Both *placement and*

Reedley College Placement Data (Fall 2014)	
Title of Course	Students
<i>Basic College Math – 3+ levels below college</i>	33%
<i>Elementary Algebra – 2 levels below college</i>	43%
<i>Intermediate Algebra – 1 level below college</i>	21%
<i>College-Level</i>	4%

acceleration barriers for STEM students prevent student from completing requirements for their STEM degree. Mathematics is a gateway course that all students must complete to qualify for STEM major courses. With 96% of entering students placing below college level math, RC needs to simplify and accelerate the basic skills mathematics pathways. Currently there are four basic skills levels of mathematics before students can begin college level math; an issue that is aggravated because students who place into remedial level courses are less likely to complete a transfer level mathematics and are thus unable to complete STEM degrees.

Completion Rates of Transfer-Level Math Within 3 Years <i>Reedley College – Fall 2012-Spring 2015</i>	
At Transfer Level	71%
One Level-Below Transfer	27%
Two Levels Below Transfer	13%
Three+ Levels Below Transfer	6%
Overall	19%

Low number of students enrolled as STEM majors and low retention rates: With almost 70% of students at RC identifying as Hispanic the low number of STEM major students (19) identified in the data below shows a great need to increase the number of Hispanic students majoring in STEM fields. In addition, Hispanic and low income student retention needs significant improvement (currently 21-25%). Evidence shows that these numbers will be improved with focused tutoring and counseling services. (*Absolute Priority 1, CPP*)



Student Population	First Term Fall 2014	Enrolled Fall 2015	Retention
Hispanic	19	4	21%
Low income	12	3	25%

Source: RC Institutional Research 5/2016- Number of full-time, STEM major, Hispanic and low income students enrolled in Fall 2014 (2 separate cohorts Hispanic/Low income)

Low number of Hispanic and Low Income students transferring in STEM fields:

Low numbers extend to those targeted student groups who transfer in STEM fields within six years. Expanding the capacity of Reedley College to offer STEM degrees, student support services and dedicated STEM counseling (focused on transfer) will combine to increase this percentage. (*Absolute Priority 2, CPP*)

Student Population	First Term Fall 2008	Transfer to 4 year	Percentage
Hispanic	45	9	20%
Low income	43	9	21%

Source: RC Institutional Research -Number of first-time, degree seeking, full-time, STEM major, Hispanic and low income students enrolled in Fall 2008

Low number of Students selecting STEM majors: At RC, Hispanic and low income students are NOT choosing to study sciences. This is substantiated by a disproportionately low number of transferring students studying in biology, chemistry, and physics programs. *Only 14% of students graduated in STEM related fields and only 1% completed an Associate*

Degree for Transfer (ADT) over the last five years. This alone explains the great need in the region for RC to utilize an H.S.I. STEM grant to improve student outcomes. Hispanic students are least likely to enroll in STEM related majors even though RC offers 39 STEM related majors of which seven have been

Number of Degrees Awarded by Academic Year	
Degrees Articulated -ALL	
2012-2013	1118
2013-2014	1476
2014-2015	1304
# of STEM Associate of Science Degrees Awarded	
2012-2013	159
2013-2014	201
2014-2015	189
# of STEM ADT Degrees Awarded	
2012-2013	16
2013-2014	35
2014-2015	18

Source: RC Inst. Research

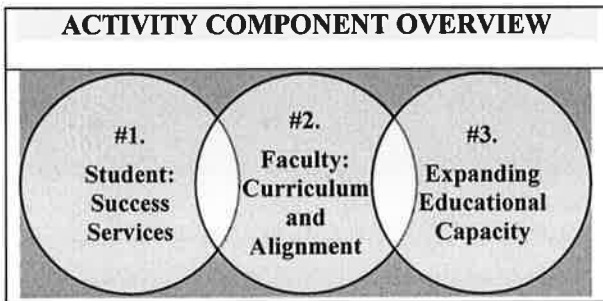
identified as ADT programs. RC needs to increase the number of articulated STEM ADT plans, especially with CSUF, where a majority of students who transfer enroll after completing the RC program. By tasking a STEM-4-STEM staff member (Adjunct STEM Counselor/Articulation



Officer) with organizing and solidifying ongoing work already taking place between community college and CSUF STEM faculty members, the project will maximize the impact of articulation coordination to the benefit of all STEM students. Data and dialogue among STEM faculty members as this proposal was developed, identified several student needs, including:

Reduce the number of student placing in basic skills Math and English
Increase the progression of students from basic skills to college level courses
Increase the persistence of students in STEM majors
Increase graduation and transfer rates of students in STEM fields

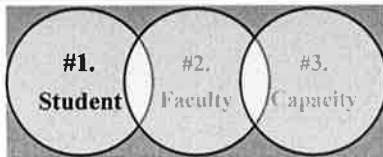
(2) Design includes a thorough, high-quality review of the relevant literature, high-quality plan for project implementation, and use of appropriate methodological tools to ensure successful achievement of project objectives.



STEM-4-STEM will develop and implement practices based on research demonstrating the effectiveness of selected methods in assisting low income, high-need Hispanic students like those it serves. Project design

and summarization of chosen strategies appears below, along with supporting literature.

Student: Success Services



Tutorial and Counseling: RC intends to create a multi-faceted support program for Hispanic and low income community college students in need of developmental (remedial) courses.

This program is based on WWCH Competitive Preference Priority study, “The City University of New York’s *Accelerated Study in Associate Programs (ASAP)*” program which will include the following components: tutoring support, advising, counseling, linked course scheduling, financial support and program orientation.

Mentoring: Typically, mentoring is described as a close one-to-one relationship - often formalized and intensive - where an older, more experienced mentor helps to guide and encourage a younger less experienced mentee.⁷ However, models of mentoring have transformed in the past two decades such that it is now more widely accepted that mentoring can be obtained through various sources, including professional organizations, on-line systems, and even shorter-term relationships.⁸ RC will infuse its STEM-4-STEM project with both faculty and industry mentorship for participants in order to help them establish understanding of both academic and career options in relation to their educational goals and planning.

Acceleration: Acceleration involves reducing the length of time to progress through pre-college sequences and providing significant supports at the exit points where students are lost by not passing or not enrolling in sequential courses.⁹ A study by the Research and Planning Group (RP Group) for California Community Colleges focused on student acceleration and completion of transferable gatekeeper math and English courses among 2,489 students taking remedial courses (1,836 in English, 653 in math). The study compared accelerated students with students in traditional remedial pathways, and followed them for either one and a half or two years (depending on student cohort). The study examined whether accelerated approaches that had been successful at individual colleges could be scaled up across multiple institutions. Using statistical methods to control for any pre-existing differences in student characteristics, the RP Group's quasi-experimental evaluation found significantly higher completion rates among

⁷ Crisp, G., & Cruz, I. (2009). Mentoring college students: A critical review of the literature between 1990 and 2007. *Research in Higher Education*, i(6), 525-545.

⁸ Packard, B. W. (2003). Web-based mentoring: Challenging traditional models to increase women's access. *Mentoring & Tutoring*, 11(1), 53-65.

⁹ California Acceleration Project (CAP): CA Community Colleges' Success Network (3CSN), w/ Johnson Foundation, Learning Works, & "Scaling Innovation" Comm. College Research Center, NY: Columbia Univ. . <http://cap.3csn.org>; http://www.rpgroup.org/system/files/CAP_Report_Final_June2014.pdf



students in accelerated remediation: in English, students’ odds of completing a college-level course were 2.3 times greater in high-impact models of acceleration than students in traditional remediation; students’ odds of completing a college-level math course were 4.5 times greater than students in traditional remediation.

RC will use models of acceleration based on these findings, existing campus best practices, and relevant investigated research such as that noted in the table below in developing a strong acceleration component for coursework involved in the STEM-4-STEM project.

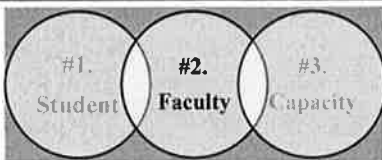
Acceleration: Selected Relevant Research Investigated
California Acceleration Project (CAP): CA Community Colleges’ Success Network (3CSN), w/ Johnson Foundation, Learning Works, & “Scaling Innovation” Comm. College Research Center, NY: Columbia Univ. http://cap.3csn.org ; http://www.rpgroup.org/system/files/CAP_Report_Final_June2014.pdf
“Accelerating the Academic Achievement of Students Referred to Developmental Education.” (CCRC Working Paper No. 30, Assessment of Evidence Series) By: Edgecombe — 2/2011. NY: Teachers College, Columbia Univ. <i>Reviews literature on models for accelerating students through developmental education.</i>
“A Model for Accelerating Academic Success of Community College Remedial English Students: Is the Accelerated Learning Program (ALP) Effective and Affordable?”(CCRC No. 21). Jenkins et al.
“Student Progression through Developmental Sequences in Community Colleges.” (CCRC Brief No. 45) By: Bailey, Jeong & Cho. 9/ 2010. New York: Community College Research Center (CCRC), Teachers College, Columbia University. <i>Multi-state study examines how over 250,000 students did — and did not — make it through developmental sequences at 57 community colleges participating in Achieving the Dream.</i>

Computer Assisted Instruction (CAI) in Math: Research conducted in Netherlands set out to find the effectiveness of computer-assisted- instruction using online and adaptive educational tool in learning mathematics in secondary school. Study results showed the coefficient was positive and significant for all specifications; instrumented for the participation in the CAI-tool, making more exercises lead to higher test scores. The average student increased post-test scores by 0.035 (0.0007*50) which is about 3.5%. *IV-regression further reveals that, given the ability of the student, the percentage of students coming from disadvantaged*

neighborhoods increases the post-test scores. Working with a CAI-tool in math seemed therefore effective.¹⁰

In addition, in the Technology's Edge study (2009) found that students randomly assigned to computer-aided instruction score significantly higher on a pre-algebra and algebra test than students randomly assigned to traditional instruction. The study hypothesized that this effectiveness arose from increased individualized instruction, as the effects appeared larger for students in larger classes and in classes with high student absentee rates.¹¹

Faculty: Curriculum and Alignment



Curriculum Alignment: In the article "Curriculum Alignment Research Suggests That Alignment Can Improve Student Achievement"¹² the Third International Mathematics and

Science Study made a case that curriculum design needs to include alignment. The study showed that curriculum needs to be aligned in several areas including: content, performance, level of difficulty and balance and range. The Adjunct STEM Counselor/Articulation Officer will ensure that both aspects are considered by faculty working groups in relation to the development of ADT's.

Seamless Curricular Alignment (Community College to 4 Year Institution): The Central Valley Promise (CVP) teamed RC's largest partner institution for STEM fields, CSU, Fresno with local area community colleges (including RC) in an effort to affect the K-16

¹⁰ De Witte, K., Haelerman, C., Rogge, N. (2014) The effectiveness of a computer-assisted math learning <http://www.tierweb.nl/tier/assets/files/UM/publicaties%20overig/The%20effectiveness%20of%20a%20computer%20assisted%20math%20learning%20program%20-%2009-2014.pdf>

¹¹ Barrow, L., Markman, L., & Rouse, C. E.. (2009). Technology's Edge: The Educational Benefits of Computer-Aided Instruction. *American Economic Journal: Economic Policy*, 1(1), 52–74. Retrieved from <http://www.jstor.org/stable/25760027>

¹² Clearing House. Jul2012, Vol. 85 Issue 4, p129-135. 7p.

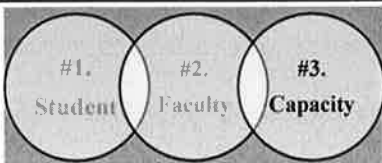
regional pipeline. Based on the award winning Long Beach Promise, the CVP initiative sought to provide seamless education for STEM students from K-12, through community college, and on to University. The CVP had two main features; increasing the college level attainment and the alignment of community college and university curriculum. The Central Valley Promise is bigger than just the STEM fields but through this grant, we would like to create a specific STEM focus in these activities and use the established partnership to facilitate changes to benefit students. A combined effort with the continuing CSUF CVP, STEM-4-STEM will seek to increase the number of Hispanic and low income students completing and transferring in STEM fields and addressing the low educational attainment levels of our area through technology.

Complementing RC's proposal, CSUF also has plans (through its "Gateway to Engineering" program) to prepare a customized, active, learning-based curriculum, to include redesigned English and Math remedial courses. Their project will seek to rapidly move under-qualified Engineering students who minimally qualify for admittance to CSUF, into core courses. This process is aimed at increasing the enrollment and graduation rates of targeted students. CSUF has offered to include RC faculty and students at no charge to RC. This significantly expands RC's relationship with CSUF to include co-professional development via summer immersion workshops and involvement in a year-long faculty learning community, and accelerated development of the State's transfer packages and courses, to streamline transfer between the community college and CSU campuses.

The STEM-4-STEM Adjunct STEM Counselor/Articulation Officer will work directly with the "Gateway to Engineering" program staff to ensure seamless integration of expanded articulation activities in both projects.

Professional Development: The theoretical work of Lave and Wenger (1991)¹³ on communities of practice, and research by Horn (2005)¹⁴ has demonstrated the ways that professional responsibility can shift through intentional work in a community of practice. Communities of practice share the tasks of problem solving, requests for information, identification of assets, discussions of common issues, and documentation of experiences. As teachers' professional identity shifts from one that centers on conveying and assessing static knowledge to one that centers on creating rich environments and engaging students in conceptual learning, faculty may become more willing to engage with new pedagogical approaches in the classroom. Their sense of professional creativity may range from rebuilding the curriculum to applying learning principles in ways that fit the needs of their students. Gaining new pedagogical skills and shifting professional identity are mutually supportive experiences. As teacher try new pedagogical approaches in the classroom, they see their students and understand learning differently. As noted previously, ongoing and expanding work in professional development between RC/MC and CSUF faculty members will include not only the STEM-4-STEM project but the DISCOVERe tablet program, the "Gateway to Engineering" program, and the CVP.

Expanding Educational Capacity



Improving Laboratory Sciences: Science lab equipment

allows college students to interact directly with the data gathered by performing various experiments. Students are made

to use the models and understand different scientific theories and concepts which cannot simply

¹³ Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation* (1st ed., Vol. 95, p. 138). Cambridge, England: Cambridge University Press. doi:10.2307/2804509

¹⁴ Horn, I. S. (2005). *Learning on the Job: A Situated Account of Teacher Learning in High School Mathematics Departments*. *Cognition and Instruction*, 23(2), 207– 236.

be explained from books. Studies have found that school science lab equipment and supplies contextualize teaching increased learning for teacher and students. For example, anatomy models, physics, and chemistry experiments illustrate otherwise complex theories of science.

Students develop interest in scientific research in science labs. When they observe various things and carry out different experiments, their reasoning skills are honed and they start thinking deeply on those theories and concepts. Colleges thus play a vital role in bringing up the next generation of engineers and doctors. Advances and developments in the field of medical science and technology cannot take place if schools do not prepare brilliant and dedicated scientists and researchers; by equipping labs with the latest advanced materials and supplies, they contribute to scientific advances yet to come.

One specific way to improve the RC science labs is the creation of an engineering/computer science studio through “repositioning”. The Univ. of Maryland’s Jeong H. Kim Engineering Building serves as a successful example of repositioning where the building was transformed from a collection of classrooms to a showcase center, replete with cutting-edge engineering labs, intelligent transportation simulation areas and spaces for microelectronics instruction. The bottom line of the aggressive repositioning included better student and faculty experience, more effective grant applications and awards, innovative research and a campus discussion remake existing, purpose- built centers to better serve today’s research activities and student-centered academics.

The following page provides an overview of STEM-4-STEM’s use of appropriate methodological tools to ensure successful achievement of project’s five measurable objectives. It should be noted that annual measures of project objectives are provided in the *Evaluation Section* of the application documents.

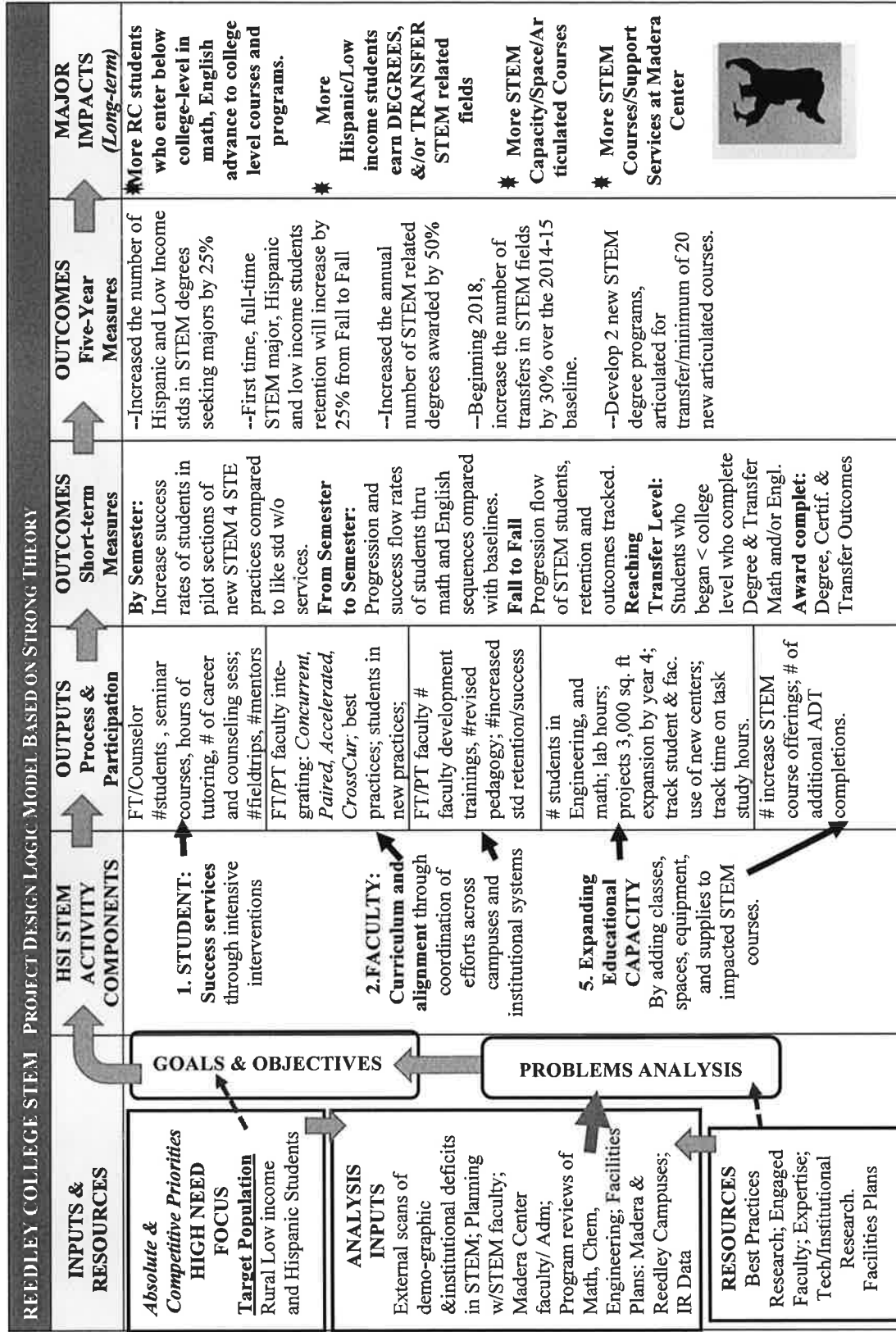


Support Services and Instructional Support to Certify Meeting of Objectives	
Five-Year STEM-4-STEM Objectives	Methodology for Success
<p>OBJECTIVE 1: Increase Hispanic and Low income STEM Degree Seeking Majors Fall 2015 Baseline: <u>Hispanics</u> 255 stds and <u>Low income</u> 144 stds. <i>By 2021, Reedley College will have increased the number of Hispanic and Low Income students in STEM degrees seeking majors by 25%.*</i></p>	<p>STEM-4-STEM will provide the following comprehensive services which will foster STEM enrollment, persistence, and success that make these four objectives achievable:</p> <ul style="list-style-type: none"> • Provide information on postsecondary admission process and academic advising • Counselor review of Student Educational Plan and make adjustments as needed degree complete and/or transfer • Provide guidance with major/career selections • Provide assistance to complete admission application • Provide financial aid and financial literacy workshops. • Provide guidance on class selection for degree/certificate completion • Provide referrals to campus student support programs and tutorial services • Encourage students to participate in STEM leadership, Ambassador Program, organizations and campus activities • Improve STEM pedagogy and facilities
<p>OBJECTIVE 2: Retention of Hispanic and Low income Student majoring in STEM Fall 2014 to Fall 2015 Baseline: 61% <u>Hispanic</u> & 64% <u>Low income</u> Students remained STEM major <i>By 2021, first time, full-time, STEM major, Hispanic and low income students retention will increase by 25% from Fall to Fall.*</i></p>	
<p>OBJECTIVE 3 Increase Number of STEM Degrees Spring 2015 Baseline: <u>Hispanics</u> 74 stds / <u>Low income</u> 42 stds STEM degree <i>By 2021, Reedley College will have increased the annual number of STEM related degrees awarded by 50% over the 2015 baseline.*</i></p>	
<p>OBJECTIVE 4: Increase STEM Transfers to Four-Year Institutions 2014-15 Baseline: <u>Hispanic</u> 21% and <u>Low income</u> 50% transferred in STEM fields Beginning in the third grant year, <i>Reedley College will have increased the annual number of STEM related transfers by 30% over the 2014-15 baseline.*</i> Transfers in newly articulated programs to both public and private four-year institutions will be counted.</p>	
<p>OBJECTIVE 5: Increase STEM Articulations to Four-Year Institutions Spring 2015 Baseline: 7 Associate Degree Transfer programs (ADT) <i>By 2021, develop two new STEM degree programs, articulated for transfer and a minimum of twenty new course articulation across a minimum of five departments.*</i></p>	

(3) The extent to which the proposed project is supported by strong theory.

The **strong theory** which underscores the high quality project-specific logic model (next page) which guided project design - and will also support implementation, monitoring and evaluation - is evident in every aspect of this proposal. Beginning in the *Project Design* section with *Faculty Inputs and Processes* detailed with statistical data sources. Broad constituencies were involved in researching and the writing proposal, **including the research and development of required comprehensive logic model for a strong project design.** (See model on the following page.) Goals were logically derived in response to documented problems, in tandem to examination of absolute and competitive priorities. **High need students as defined are priority of project, with emphasis on low income and Hispanic students.**

The faculty grant development team researched best practices and jointly agreed upon both the current gaps present in RC/MC STEM and the documentable strategies and best practices to address those gaps. Inclusion of personnel who will be closest to oversight and involvement in post-grant sustainability supports project impacts and new practices both during the project period and in long-term. The excellent potential for scalability of services beyond the grant period was an important part of the project services selection. In both the *Project Management* and *Evaluation* sections of proposal, the logic model design was expanded with feedback process for continual improvement followed by the External Evaluator and the Principle Investigator.



(4) The extent to which the proposed project represents an exceptional approach to the priority or priorities established for the competition.

Coordinated Delivery of Student Services (Absolute Priority 1, CPP): Reedley College

has researched best practices for student success. The CUNY ASAP study demonstrates that a coordinated services response is essential to student success. The combined efforts of

tutoring, counseling, mentoring and *engagement* have been shown to improve the success of populations similar to our Hispanic and low income students.

Coordinated STEM Success	
Tutoring	Math Center, Peer Tutoring, SI
Counseling	STEM Counselors, STEM Career Courses, STEM transfer assistance
Mentoring	Peer to peer, student to instructor, and student to industry professional
Engagement	STEM ambassadors, internships, Central Valley STEM Conference

Selected services are drawn from the literature, as well as the recommendations of experts with the *Completion by Design* initiative funded by the Gates Foundation, *Achieving the Dream* funded by the Lumina Foundation, and the National Research Council’s recommendations for implementing the *Next Generation Science Standards*. Reedley College has studied the practices used by the community colleges recognized by the Aspen Prize competition as achieving top results, and have drawn from their experience in serving similar low income populations.

Curriculum Alignment with 4-year Institution (Absolute Priority 2): Reedley College

will be modeling its curriculum alignment work after the award winning Long Beach Promise.

The Long Beach Promise project had as one of its fundamental components was curriculum alignment between community

Award Winning Long Beach Promise
2014 James Irvine Foundation Leadership Award
2013 Little Hoover Commission (Successful Model)
200% increase in transfer-math success (year to year)
43% increase in CSU enrollment

colleges and state universities; a local version been established by four-year partner, CSUF, in their Central Valley Promise. Designated as a successful model from the Little Hoover Commission and receiving the James Irvine Foundation, Leadership Award in 2014; the Long Beach promise demonstrated a 200% increase in transfer math success (year to year).



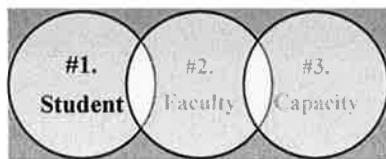
SECTION II: QUALITY OF PROJECT SERVICES

(1) The extent to which services to be provided by the proposed project reflect up-to-date knowledge from research and effective practice.

ACTIVITY COMPONENTS & ASSOCIATED SERVICES & STRATEGIES

- I. Student: Success Services (*Absolute Priority 1*), (*CCP*)
- II. Faculty: Curriculum and Alignment (*Absolute Priority 2*)
- III. Expanding Educational Capacity (*Absolute Priority 1 and 2*)

I. Student: Success Services (*Absolute Priority 1 & CCP*)



STEM-4-STEM: Based on the study, “*Doubling graduation rates: Three-year effects of CUNY’s Accelerated Study in Associate Programs (ASAP) for developmental education*

students”¹⁵; STEM-4-STEM provides many of the components found in the original study including focusing on transfer and student engagement, with the addition of mentoring activities.

Student Transfer: The *Alianza de Transferencia* (Transfer Alliance Program), is located in the Transfer Center and is supported by a bilingual Transfer Counselor - who will work in partnership with the STEM-4-STEM Counselor/Coordinator to add a STEM track to the program. Hispanic and low income freshmen who have identified themselves as intending to transfer are invited to participate in *Alianza de Transferencia*. Information regarding the program will be disseminated in transfer level English and math courses, with featured special activities for those students planning to transfer in STEM fields. Workshops for students to meet with UC, CSU, and private universities regarding transfer processes will be offered.

Alianza de Transferencia
Transfer counseling
Campus visits to 4-year colleges
Assistance with transfer and financial aid applications
Parent Education on College Culture

¹⁵ Scrivener, S., Weiss, M. J., Ratledge, A., Rudd, T., Sommo, C., & Fresques, H. (2015). *Doubling graduation rates: Three-year effects of CUNY’s Accelerated Study in Associate Programs (ASAP) for developmental education students*. New York: MDRC.

Parents of Hispanic students involved in *Alianza de Transferencia* are invited to attend bilingual meetings regarding the benefits of attending a baccalaureate institution. Former RC STEM students who have transferred, will be invited along with their parents to participate in an event and answer questions and concerns current students and parents may have. UC and CSU area representatives will discuss their campuses with financial aid officers available to inform students and parents about funding options for education.

Student Tutors: No student is able to complete a degree or transfer without fulfilling math requirements. RC Math Center data shows that Hispanic student who use the Math Center are 11.6% more likely to be successful in their math course than Hispanic students that do not use the Center. The STEM Counselor/Coordinator for the STEM-4-STEM project will coordinate the full range of support services for students - including tutoring, study groups, and test preparation. Tutoring and learning support will be strengthened via STEM-4-STEM student workers to include additional tutorial best practices such as Supplemental Instruction.

Student Engagement: Engaging students in their chosen academic fields is a critical element in helping to ensure their retention and completion of educational goals. The STEM-4-STEM project will employ the following proven engagement strategies for program participants.

STEM Internships -Successful experiences with internships in industry and the community confirm Garcia and Robinson's conclusions on faculty willingness to integrate service-learning into their courses.¹⁶ Some of the greatest benefits of field experiences are increased comprehension of course materials, establishment of career goals, and improved identification with the community served. Students become engaged in their learning, engaged

¹⁶ Garcia, Rudy & Robinson, Gail. *Transcending Disciplines, Reinforcing Curricula: Why Faculty Teach with Service Learning*. AACC. 2005



with other students and with faculty, engaged in their community, and retention and other outcomes improved.^{17,18}

STEM Ambassadors - Students will participate in activities promoting their chosen fields as “STEM Ambassadors”, leading middle and high school students in STEM outreach activities (e.g. orientation, shadowing professionals in the field, demonstration, etc.).

Central Valley STEM Conference - Hosted by RC students, faculty and staff in collaboration with CSUF, this event is an opportunity for high school and college students to meet and listen to guest speakers - Engineers, Agricultural Scientists, Chemist, Biologists, etc. University representatives from prestigious universities will also give presentations.

Bitwise Academy – STEM-4-STEM cohort members will have the opportunity to engage in intensive computer science training at local industry partner, Bitwise Industries, as part of their two week summer academy. This bootcamp is an intensive introduction into computer programming as a field of study.

Student Mentoring - Many different kinds of mentoring relationships contribute to persistence in college and within STEM fields specifically. Students are more likely to be retained in STEM when they experience a combination of 1) socio-emotional mentoring functions, such as encouragement or role modeling, and 2) instrumental mentoring functions, including academic support, college navigation, and career coaching.¹⁹ Career-relevant mentoring programs including undergraduate research experiences and on-line career mentors (MentorNet). These can each have a strong impact on diverse students pursuing community

¹⁷ Rimmerman C.A. et al, (2009) Service Learning: How & Why it Works.

¹⁸ Weglarz, S. & Seybert, J. (2007). Participant Perceptions of a Community College Service-Learning and Community Internship Programs. *Comm. College Journal of Research Practices*, Vol. 28, no. 2, 123-132.

¹⁹ Packard, B. W. (2004-2005). Mentoring and retention in college science: Reflections on the sophomore year. *Journal of College Student Retention: Research, Theory, & Practice*, 6, 289-300.



college STEM pathways to four-year degrees because of its connection to real work environments, and to future employment possibilities. STEM programs are a natural mentoring choice for partnerships with community colleges and universities with nearby corporations; all have a vested interest in local schools, education, and what students need to know.²⁰ Business and industry leaders are best positioned to understand both the kinds of jobs that will be in demand and the specific skill requirements of those jobs. Participants will benefit from mentoring from a professor or a person in the industry, and will improve their overall academic achievement as a result of their deepened understanding of their field of study.

Accelerated approaches to increase success and progression: Also in fidelity with the “*Doubling graduation rates: Three-year effects of CUNY’s Accelerated Study in Associate Programs (ASAP) for developmental education students*” study, RC will provide math and English acceleration to increase the success rates of students who first enroll in remedial courses and move them towards transfer level course. Accelerated developmental education aims to increase numbers of community college students who complete college-level ‘gatekeeper’ courses (*ENGL 1A, MATH 4A & 11 for transfer*) – and pre-requisites to these courses. Acceleration involves reducing the length of time to progress through pre-college sequences and providing significant supports at “exit points” where students are lost through not passing or not enrolling in sequential courses. Faculty researched the following models and consensus was reached on which best suit Reedley students:

- Placing Students into College-Level Courses through multiple measure placement
- Acceleration Models that Combine Levels of Existing Sequence into a single term
- Compressed Courses allow students to take two full courses back to back in a semester

²⁰ <http://connectlearningtoday.com/benefits-stem-programs/>



Cross-curricular Concurrent Enrollment Strategies: Research for math/science cross-curricular pairing indicates improved outcomes in both paired courses, by allowing students to focus on one challenging course at a time, with a related course immediately following the first, in a paired, sequential mode. California Acceleration Project (CAP) studies conducted by the RP Group²¹ confirm that the approach is especially effective with students who historically have struggled with math and science classes. The RC math plan minimizes scheduling conflicts through creative cross-curricular course pairings relevant to STEM majors. The students will take a nine-week math course followed by a science course in the second nine weeks of the semester, instead of taking the courses simultaneously.

The English department's cross-curricular pairing builds on research that supports coordinating efforts to expand the number of reading and composition sections paired with identified curricular/career pathways, supporting completion of requirements in individual Student Educational Plans (SEPs). Four higher education research groups²² have engaged in long-term examination of best practices to increase successful completion/graduation of community college students. All agree structured pathways can guide students to completion, including linking basic requirements (such as English and Reading) into pathways for structured goal completion.

Including pre-college levels of Math and English in FYE cohorts: The RP group documented positive evidence-based studies of First-Year Experience (FYE) programs.

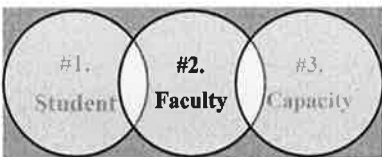
²¹ California Acceleration Project (CAP): CA Community Colleges' Success Network (3CSN), w/ Johnson Foundation, Learning Works, & "Scaling Innovation" Comm. College Research Center, NY: Columbia Univ. . <http://cap.3csn.org>; http://www.rpgroup.org/system/files/CAP_Report_Final_June2014.pdf

²²Cross-curricular and Pathways Concurrent Enrollment: Selected Relevant Research Investigated **Completion By Design**, *Guided Pathways to Success: Boosting College Completion*. Indianapolis: **Complete College America**, 2013; Overview of Guided Pathways Approach *Matter of Degrees: From Practices to Pathways* (2014); Education Advisory Board: *Building Guided Pathways to Success*; **CCCSE** (Community College Center for Student Engagement) *Redesigning Community Colleges for Student Success*; **CCRC** (Community College Research Center) Teachers College, Columbia University.2014

Successes with the limited pilots of FYE at RC confirm that this practice works to retain high need students and to improve their success rates. The following three strategy concepts will also be implemented and have had significant research completed within the community of practice at the CA Community College Research and Planning Group.²³

- 1) *Embedded supports in courses: such as tutors, test prep, difficult concept reviews,*
- 2) *Companion 1 unit classes or COUN 53 (study skills component)*
- 3) *Required Time-on-Task study hours (with access to learning assistance)*

II. Faculty: Curriculum and Alignment (*Absolute Priority 2*)



Knowledgeable faculty and staff must carry out the improvements to student services STEM 4 STEM and academic programs. For the student success components above

to be successful, faculty and staff development is necessary. Improvement cannot rest on individual motivation, nor can systemic change like that proposed in this plan be accomplished one person at a time. Change at scale requires broader vision, systemic perspectives, and a sustainable infrastructure. Professional development underpins the efforts.

A Theory of Change: Supporting a Professional Community of Teachers: To

produce large effects at scale, improvement has to be managed at all three dimension of scale levels simultaneously. Drawing on

research, theory, and practice, RC

Three Dimensions of Scale:

- **Individual** – unit of instruction
- **Organizational** – across units within institution
- **System**– across institutions within a system

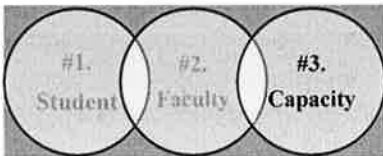
proposes a practical theory of change to improve community college math and English teaching and learning. The widespread nature of the challenge means that work will be designed at scale; working at the individual level, the departmental level and the broader system level.²⁴

²³ A Guide to Transforming Basic Skills Education in Community Colleges, Inside and Outside the Classroom; Elisa Rassen, et al. 3/ 2013. <http://www.rpgroup.org/resources/transforming-basic-skills>

²⁴ Elmore, R. (2008). Leadership as the Practice of Improvement. In B. Pont, D. Nusche, & D. Hopkins (Eds.), Improving school leadership: volume 2: case studies on system leadership. Paris, France: OECD Publishing.

Reedley College’s theory of change and work plan centers on engaging STEM faculty in opportunities to expand their pedagogical repertoire, improve curricula, align curriculum to 4 year institutions, enlarge their network of professional relationships, and extend their professional identity. This model requires recognizing the complexity of teaching and learning, investing in teachers, and providing settings rich in professional learning opportunities in the department and beyond. This is not a theory focused solely on addressing the particular or immediate problems of student success in courses or overall completion. This is a strategic proposal for building the ongoing capacity, resilience, and flexibility to deal with inevitable future changes in policy, economy, technology, and job growth. In other words, while supporting achievement of the objectives of this proposal, faculty development also will continue to pay off after the grant period.

III. Expanding Educational Capacity (*Absolute Priority 1 and 2*)



Students at the main RC campus have the opportunity to earn 21 different transfer degrees in STEM fields. The Madera Community College Center (MC) location is not able to

schedule enough course for students to complete all these potential degrees due to lack of faculty and space. The need to expand the number of course in Math, Physics and Engineering is clear.

Math Department: Currently the MC does not offer the Mathematics Associate Degree for transfer because required courses Math 6 (Math Analysis III) and Math 17 (Differential Equations and Algebra) are not offered at that location. The associate degrees for transfer are now being used by students in California with the passage of Senate Bill 1440. To ensure that students obtain the mathematics ADT degree at the MC, the required transfer math courses will be offered to allow students to stay at the MC and not have to travel 30 miles to sister campus,

Reedley College, to complete their requirements. Math 6 is also a part of the degree requirements for the Physics ADT degree that will be offered at the MC.

Physics: MC does not offer a Physics ADT, which is offered at other campuses in the State Center Community College District, due to the lack of required course offerings on site at the Center. Currently the following required courses for the Physics ADT are not offered at the MC: 1) Physics 4C (Physics for Scientists and Engineers). By offering this course students will be able to have the course needed for the Physics ADT and also the course needed for our engineering students missing a major preparatory requirement to transfer to a four-year university. 2) Physics 2A (General Physics1) and 3) Physics 2B (General Physics 2). By offering these courses Biology, Chemistry, Computer Science, and Pre-Health majors would be able to complete these courses that support them in transferring to four-year universities.

Engineering Department: The MC does not have an engineering program and students who want to major in engineering will need to travel to the main RC campus (30 miles away) to take them. In order for students to major in engineering and obtain an associate degree in engineering the following courses will need to be offered at the MC:

Engineering 10- Introduction to Engineering	Engineering 40-Sci & Engn. Programming
Engineering 2-Graphics	Engineering 6-Electrical Circuits w/ Lab
Engineering 4-Materials	Engineering 8-Statics
Engineering 4L-Materials Lab	

By offering the above course, three more degrees will be offered that may be completed at the MC site. The courses that are offered by all three departments will allow students to be better able to transfer to a four-year university with their major preparatory, lower division courses completed. It will also allow the development of a STEM foundation at the MC.

Equipment: Equipment additions, detailed below, will strengthen existing STEM courses and programs and labs, and improve articulation of courses needed for transfer to the



upper division at a university. Chemistry and biology students require hands-on work time in order to be prepared for higher degrees and/or in the workplace. Remodeling labs to provide more work stations will help fill this gap in addition to the installation of deionized water system and expansion of a chemistry closet in order to provide the up-to-date equipment students need to prepare them for transfer. Finally, state-of-the-art computers and computer software are needed to give students college level skills in managing concepts involved in the sciences and to lay the groundwork for working toward a transferable chemistry and/or biology degree.

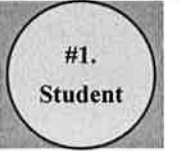

STEM-4-STEM Lab Experiences Improvements: <i>Allowing students at RC & MC to match lab experiences at four-year institutions</i>
• Updated lab equipment, improved safety standards.
• Update to green fume hood technologies, replacing 15 year old hood systems.
• Lab computers to allow students to process data with specialized software and to perform real-time data analyses. Special software in specific labs needs computers to teach key concepts.
• Updated and fully functioning microscopes to better prepare students in science courses.
• New whiteboard placement to allow instructors use of both projectors and writing space to increase student engagement in learning.
• New lab chairs to replace current selections which are falling apart.

Physical Facilities Improvements: This project will involve the renovation of two Math classrooms/computer labs. The computers will meet the minimum system requirements for the courses being taught in the science and math labs. These new computers will be paired with monitors sized appropriately for the space available in the lab and the visual needs of the program. The update will also require proper networking of the lab to allow for efficient use of lab time and instruction. The lab will also require a new high definition projector to aid in visual demonstrations during class lectures. The monitors will be able to fold down into the table allowing for increased table space for additional classes where the computers will not be necessary. This will also allow for decreased student distraction during lecture and lab periods when the computers are not in use. This will also allow for decreased student distraction during lecture and lab periods when the computers are not in use. The new tables will hide wires and the

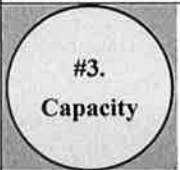
classroom setup will have an aisle down the middle and on the two sides for easy access to students. The updated Math Classrooms will allow for Computer Assisted Instruction

“Repositioning” current building space to an engineering /computer science (ENGR/CSCI) project studio for engineering and computer science students would allow them to work on projects at times outside of their regular class time; giving them space to experiment, design, program, and learn. The studio will be created adjacent to the current math center, renovating the back patio area to incorporate this new space. The ENGR/CSCI studio would include two offices (for ENGR and CSCI faculty to be nearby), a long row of desk space for computers and related hardware, project work tables, and storage cabinets. This studio would be incorporated into STEM outreach events.

(2) The likely impact of the services to be provided by the proposed project on the intended recipients of those services.

Activity Component	STEM-4-STEM Services	<i>Student Impacts</i>
	<ul style="list-style-type: none"> • Tutoring • Mentoring • Counseling • Engagement 	<ul style="list-style-type: none"> • Increased understanding of course material and application of that material to assignment • Increased sense of academic community and understanding of services available • Role models in STEM fields that mirror their backgrounds and faced similar barriers • Understanding of STEM career opportunities • Student education plans with clear pathway to STEM degrees • Understanding of the transfer process and ability to apply for financial aid
<p><u>STEM-4-STEM Objectives Effected:</u></p> <ul style="list-style-type: none"> • OBJECTIVE 1: Increase Hispanic and Low income STEM Degree Seeking Majors • OBJECTIVE 2: Retention of Hispanic and Low income Student Majoring in STEM • OBJECTIVE 3: Increase Number of STEM Degrees • OBJECTIVE 4: Increase STEM Transfers to Four-Year Institutions 		
	<ul style="list-style-type: none"> • Professional Development • Curricular Alignment/ Articulation • Tablet Program 	<ul style="list-style-type: none"> • Updated Curriculum with best practices and latest developments learned by faculty through professional development • Seamless STEM educational experience from Community college to State University • Understanding of tablet technology in STEM fields



<u>STEM-4-STEM Objectives Effected:</u>		
<ul style="list-style-type: none"> • OBJECTIVE 4: Increase STEM Transfers to Four-Year Institutions • OBJECTIVE 5: Increase STEM Articulations to Four-Year Institutions 		
	<ul style="list-style-type: none"> • STEM Course/Degree Expansion • Updating Equipment and Lab Space • Engineering/Physics Lab 	<ul style="list-style-type: none"> • Increased access to STEM degrees • Guaranteed B.S. graduation in 60 units after transfer (in most majors) • Hands on experience using current industry technology in classroom • Ability to perform scientific experiments and hands on support for engineering and physics courses
<u>STEM-4-STEM Objectives Effected:</u>		
<ul style="list-style-type: none"> • OBJECTIVE 2: Retention of Hispanic and Low income Student Majoring in STEM 		

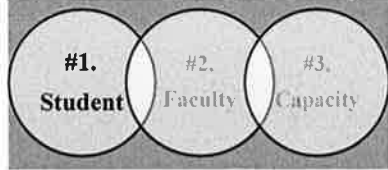
SECTION III: SIGNIFICANCE

(1) Contribution of the proposed project to increased knowledge or understanding of educational problems, issues, or effective strategies.

The STEM-4-STEM grant project represents a significant research opportunity in the evaluation of coordinated student services and curricular alignment for low income, Hispanic students. The project will employ a Principle Investigator (PI), Dr. Ignacio Hernández of CSUF, to conduct both qualitative and quantitative analysis of the participant group and project. Dr. Hernández, an educational researcher specializing in Hispanic community college populations, brings considerable experience to the research of questions regarding student retention, degree completion, and transfer. The PI will have extensive access to student records, faculty and staff details and activities, and STEM academic spaces. This will include not only data and information on the current STEM-4-STEM project, but historical data as well, providing the opportunity for comparative analysis of student results between project cohorts and prior STEM student experiences. The research will seek to answer questions related to the student and staff experience of the project, as well as providing a statistical analysis of the effect of interventions on the desired project outcomes. In addition, the PI will be able to access ongoing reporting and evaluation materials related to the project. These details will allow for a depth of analysis of project research in the context of federal funding policy and requirements as well.

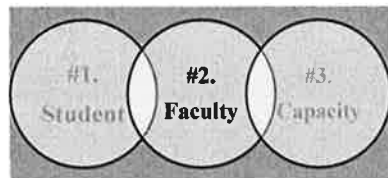


(2) The likelihood that the proposed project will result in system change or improvement.



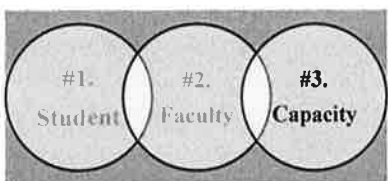
Selected strategies related to *student success services* are rooted in the CUNY ASAP model which demonstrated that comprehensive, student-centered programs with dedicated staffing led to strong outcomes (retention, remediation success, degree completion, and transfer).

The ASAP project, among other studies included in the applications literature review, led to systemic change in the CUNY system. Reedley College has a history of regularly incorporating effective grant-funded practices into its general institutional functions and will seek to do so with best practices established by the STEM-4-STEM project as well.



Faculty collaboration on curricular alignment and development will create ongoing collaborative professional development opportunities both at RC and MC, and along with

CSUF faculty members. This work will include reviews of both STEM coursework and pedagogical methodologies, a practice that has been established between these institutions in relation to non-STEM fields. The STEM-4-STEM project will help to expand and formalize this collaboration in a manner which will improve and solidify important aspects of the community college student curricular and transfer experiences in highly technical academic fields.



Finally, *expanding educational capacity* through newly established associate degrees for transfer (ADT) paths, the addition of STEM related course sections at RC and MC, and

improved and redesigned educational spaces will provide for both systemic change and improvement by increasing the ability of regions educational systems to produce effective and coordinated educational opportunities for students



SECTION IV: QUALITY OF MANAGEMENT PLAN

(1) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks

TABLE OF IMPLEMENTATION : CLEARLY DEFINED RESPONSIBILITIES, TIMELINES, AND PROGRESS MILESTONES

Dates	Tasks to Be Completed	Personnel Responsible	Progress Milestones
<p>STAFF TERMS: Vice Presidents Of Instruction, Student Services, Admin. Services (VPI, VPSS, VPAS); Project Director (PD); Principle Investigator (PI); STEM Counselor (Counselor); Adjunct STEM Counselor (Articulation Officer); Institutional Research (IR); Faculty Leads - Math, Engineering, Reading, and Writing (Faculty Leads); Human Resources (HR)</p>			
<p>Grant Start-up and Administrative Tasks</p>			
10/1/2016	Award Announcement	President Caldwell	Award Announced to constituencies, communication of goals/objectives/scope of project.
10/1/16 – 12/15/16	Start-up; Set up Office; Procedures Manual Created. <i>CFR200 Regulations Implemented</i>	PD, HR, VPI, VPSS, VPAS Budget Office	Project Staffed: Personnel reassigned; Hiring processes underway; Restricted Budget Accounts Set-up and expenditure approval processes established. No delays in project start-up.
10/15/16 & ongoing	Regular schedule established for RC STEM Staff Meetings.	PD, Faculty Leads, Counselor	Initial meeting with ALL key personnel within three weeks of award notice. Ongoing Title V staff meetings will be in smaller workgroups by Activity Component.
By 12/1/16	Advisory Committee Appointed	President, PD	Advisory Committee appointed, meetings set
On-going	Advisory Committee meets regularly to support project	PD; Advisory Committee	Committee meets monthly for first three months, then quarterly through the entire five year project. Mgmt. Plan outlines responsibilities/role.
By 11/15/16	IR Officer meets with PD to establish protocols for tracking outcomes of pilot projects.	PD, IR Office, PI, Evaluator, others if needed.	Mechanisms established to track longitudinal progression of individual students in math, English, Reading, ESL and library pilots to allow assessment of impact of new practices.



TABLE OF IMPLEMENTATION : CLEARLY DEFINED RESPONSIBILITIES, TIMELINES, AND PROGRESS MILESTONES

Dates	Tasks to Be Completed	Personnel Responsible	Progress Milestones
Student: Success Services - Strategies Implementation Timeline Overview (Years 1 –5)			
10/2016 Yearly Fall &Spring	STEM 4 STEM Counselor to work with IR in identifying cohort	VPSS, PD, PI, IR Office, STEM 4 STEM Counselor	Identification of students for Fall 2016 cohort. Yearly afterwards.
11/16-1/17	Develop and implement Orientation of STEM Cohort model	STEM Counselors, PD	Create and implement annual STEM Orientation. To be held Fall and Spring for new STEM students.
11/16-5/17	Counseling Sessions	STEM Counselors, PD	STEM cohort students will see STEM Counselor 3 times per semester.
1/17 – 5/17 Ongoing	Alianza de Transferencia (Transfer Alliance) program	STEM Counselors, PD and Transfer Alliance Counselor	Develop processes for including STEM Counselor with Transfer Alliance Counselor to identify strategies in increasing retention and transfer rates of STEM stds.
1/17-6/17 Ongoing	STEM Internships/Mentoring	STEM Counselor, Job Placement Officer, PD, Advisory Committee	Work with identified staff in creating contacts and scheduling internship and mentoring opportunities with area STEM industry leaders.
1/17-5/17 Ongoing	STEM Ambassadors	PD, STEM Faculty	Offer 2 unit STEM Ambassador class. Work with area schools for STEM presentations, SCI FI Fridays and as requested by community.
Spring 2017 Ongoing	Work with <i>Padres Como Companeros</i> to educate parents and grandparents on emerging STEM fields.	Equity Coordinator PD	STEM project staff will develop and coordinate with the <i>Padres Como Companeros</i> implemented in Equity program for a track of STEM information.
April of each year	Central Valley STEM Conference (CVSC)	PD, STEM Faculty, RC staff, Advisory Committee	Organize Annual CVSC. Work with CSUF, RC STEM faculty and campus staff in executing largest STEM conference in Central California.
Evaluation of Student: Success Services Activity Component: Formative by semester. Annual summative. Final Summative. PI to research outcomes. See <i>Evaluation Plan</i> for details.			
Faculty: Curriculum and Alignment - Strategies Implementation Timeline Overview (Years 1 –5)			
10/15-1/16	Review city University of New York's Accelerated Study in Associate Programs Select Spring 2016 pilot section/s.	Math Lead And Math Faculty Dean of Math/Science	Math and English department faculty continue to work collaboratively in the implementation of researched practices to increase success and progression of pre-college level math and English students.



TABLE OF IMPLEMENTATION : CLEARLY DEFINED RESPONSIBILITIES, TIMELINES, AND PROGRESS MILESTONES

Dates	Tasks to Be Completed	Personnel Responsible	Progress Milestones
1/17- 5/21 Ongoing	Identify Professional development conferences, services, and activities listed in budget, select faculty,	STEM Faculty Math Faculty English Faculty PD, VPI, VPSS	Offer semester-long professional development for a minimum of 1-15 faculty members per year to infuse gateway and other first year courses
1/17-7/17	Complete draft of content for 1 unit math and English companion class. Math 1 unit course will be ready by Fall 2017.	Math Lead English Lead	All required approvals for instructional course development will be followed and companion course will be tied to cohorts and pilots as appropriate.
1/17-6/17	New practices pilot for Math 201 <i>Elementary Algebra</i>	Math Lead And Math Faculty	New Practices for Math/ English improvement include: Acceleration strategies; Cross-curricular Pairing of courses; FYE math pilots, and Embedded Tutors.
9/17-6/18	New practices pilot for Math 103 <i>Intermediate Algebra</i>	Math Lead And Math Faculty	Strategies will be implemented for Algebra gateways.
9/18- 6/19	Acceleration pilot of Math 250/256 Arithmetic/Pre-Algebra	Math Lead And Math Faculty	9 week/9 week accelerated scheduling with embedded tutoring support – students complete 2 levels in 1 semester.
9/19- 6/20	Cross-curricular pairings with Math 203 & Math 103(see right col). Embedded tutors and/or companion class supports to each	Math Lead And Math Faculty Tutors	Example: MATH 103/CHEM3A. Students will have improved outcomes as courses will be scheduled in sequential, 9 wk. blocks; allowing one difficult course at a time.
9/20-6/21	Scale-up Acceleration sections, with modifications based on evaluations and outcomes. Increase involvement of faculty and levels of math and English. Work closely with counselors to identify students for accelerated math pathway.	Math Lead English Lead And Math and English Faculty Tutors Counselors	Increasingly directed advising approach to encourage students who could benefit from the accelerated approach with embedded support to enroll. At time of proposal submittal the following are acceleration options from the math course catalog: MATH 250/256 College Arithmetic/Topics before Algebra; MATH 201/103 Elementary Algebra/Intermediate Algebra; MATH 4A/4B Trigonometry/Pre-Calculus
9/19-6/21	Scale-up Cross-Curricular Pairing, with modifications based on evaluations and outcomes. Involve more departments and more faculty across college in pairing courses with math.	Math Lead Math Faculty Other faculty Tutors Dean, VPI	At time of proposal submittal the following are course pairing options: MATH 201/BIO 3 ; MATH 103/CHEM3A; MATH 4A/PHYS2A; MATH 11(Statistics) with History; Psychology and/or Political Science



TABLE OF IMPLEMENTATION : CLEARLY DEFINED RESPONSIBILITIES, TIMELINES, AND PROGRESS MILESTONES

Dates	Tasks to Be Completed	Personnel Responsible	Progress Milestones
9/19-6/21	Continuation of new practices with modifications as needed to meet project goals and objectives.	IR, Math and English Lead Dean, VPI Math Faculty	Progression and success-flow tracking of students in pilots during years 1-4 of grant. Modifications as needed for continual improvement.
10/16-1/17	Review grant's English/Reading goals and objectives. Focus for year one is on FYE cohort with embedded tutoring & supports.	Writing Lead Reading Lead Faculty Dean & VPIP	English & Reading faculty continue to work collaboratively in the implementation of researched practices to increase success and progression of students enrolled in pre-college level reading and English
1/17-7/17	Continue work related to 1 unit companion class. 1 unit course or equivalent study course will be ready by Fall 2017.	Writing Lead Reading Lead Faculty	All required approvals for instructional course development will be followed and companion course will be tied to cohorts and pilots as appropriate.
9/17-6/18	Accelerated pilot section/s of ENGL252/ENGL 262 (18 week concurrent courses).	Leads Faculty Tutors	Students will advance two levels in a single semester, with embedded tutors, companion class, BTC supplemental study groups and other new practices.
9/18- 6/19	Expand the number of reading and composition sections paired with specifically identified curricular pathways and cohorts. Involve new disciplines in paired approach.	Writing and Reading Faculty; Faculty from other disciplines Tutors	English and Reading paired with required courses in popular majors. Practice assists students to complete both writing and reading requirements as well as career pathway courses as part of their Student Ed Plan.
9/18- 6/21	Scale-up infusion of new practices. BTC strategies in new Student Learning Center (SLC)	Faculty Tutors	Beyond the Classroom (BTC) is Reedley's variation on traditional supplemental instruction. With new facilities there will space for quality small group work.
9/19-6/21	Continuation monitoring of impact of new practices and continue modifications as needed.	Writing & Reading Leads, Dean, VPI Faculty, IR and PI	Progression and success-flow tracking of students in pilots during years 1-4 of grant. Modifications as needed for continual improvement.
Evaluation of Faculty: Curriculum and Alignment Activity Component:			
Formative by semester. Annual summative. Final summative. PI to research outcomes. See <i>Evaluation Plan</i> for details.			
Expanding Educational Capacity - Strategies Implementation Timeline Overview (Years 1 – 5)			
May 2018	Improve articulation of Computer Science classes at Cal State University Fresno	PD, Biol and CS Faculty, Articulation	Complete and/or improve Articulations between Reedley College and California State University -



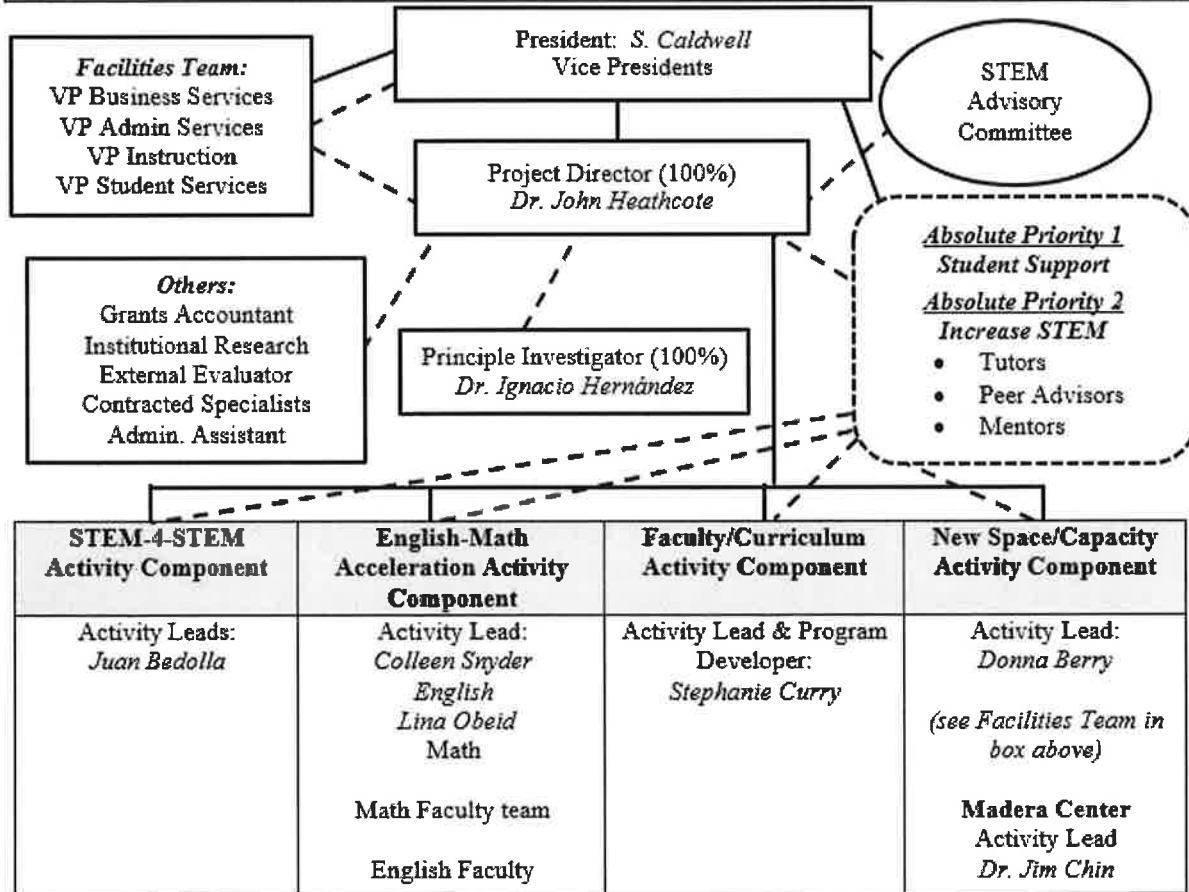
TABLE OF IMPLEMENTATION : CLEARLY DEFINED RESPONSIBILITIES, TIMELINES, AND PROGRESS MILESTONES

Dates	Tasks to Be Completed	Personnel Responsible	Progress Milestones
		Officer	Fresno
May 2018	Articulate Nutrition and Dietetics at Cal. State University Fresno	PD, Faculty, Articulation Officer	
May 2021	Upgraded the Geology and Public Health Science Articulations	PD, Faculty, Articulation Officer	
July 2018	Purchase Computers, Furniture Math Lab	PD, Dean, Faculty, Drt. of Technology	State of the art Math lab
July 2018	Chemistry Purchase Equipment	PD, Dean, Faculty	Strengthen department
August 2017	Offer required courses Math 6 (Math Analysis III) and Math 17 (Differential Equations and Algebra)	Madera Center VPI, Dean of Instruction, PD	Offer needed math courses to complete Math Associate Degree at the Madera Center
August 2019	Offer Engineering courses Engineering 10- Introduction to Engineering Engineering 2-Graphics Engineering 4-Materials	Madera Center VPI, Dean of Instruction, PD	Offer first set of Engineering Courses at the Madera Center.
August 2020	Engineering 40-Sci & Engr. Programming Engineering 6-Electrical Circuits w/ Lab Engineering 8-Statics	Madera Center VPI, Dean of Instruction, PD	Offer second set of Engineering Courses at the Madera Center completing needed courses to complete the Engineering Associate Degree to mirror RC
<i>New Facilities Development Implementation Timelines</i>			
10/2017-7/2019	Detailed of remodeling of Engineering timelines, along with needed resources and costs have been developed in a team led by the Dean of Math/Science.		New Engineering Center completely constructed and ready for use in Fall 2018.
10/2016-7/2018			New Math Labs at the Reedley Campus completely remodeled and ready for use in Fall 2017 and Fall 2018.
<i>ALL Components</i>	<i>Implement Management Plan Conduct Formative Evaluation</i>	PD, Engr./Math Faculty, Project Staff, Admin, Advisory Committee, Evaluator	Gathering of data by semester. Feedback for continuous improvement. See Evaluation Plan.
8/16-10/16	Annual Summative Review		Information gathered for Annual Reports
Evaluation of Expanding Educational Capacity Activity Component: Formative by semester. Annual summative. Final summative. See <i>Evaluation Plan</i> .			



Efficient and Effective Management Procedures: This project was designed and written by the faculty who will ultimately be responsible for implementing and institutionalizing new practices that target high need students in STEM, along with administrators who supported them will be responsible for managing and monitoring the project to ensure its success. Project staff will include a Project Director who will coordinate and manage all project activities, reporting directly to the President, and working with a Project Advisory Committee. Lead Faculty will coordinate each of the three activity components, reporting to the Project Director.

STEM-4-STEM ORGANIZATIONAL CHART



SPECIFIC MANAGEMENT PROCEDURE

Start-up Communications: College organizational units impacted by project will meet in small groups within the first three weeks of the award w/ STEM-4-STEM key personnel.



Advisory Committee: Appointments made by President within first month, with first meeting convened by week eight. Comprised from representatives from RC STEM departments and STEM industry leaders. Minutes of meetings will (1) be electronically sent to Vice-Presidents, as well as to personnel at the Dean-level whose administrative units are directly impacted by the activities of the grant; and (2) posted on the STEM-4-STEM project website. The Committee will meet monthly for the first three months, and quarterly thereafter.
Close Communication with Federal STEM-4-STEM (HSI STEM) Office will be encouraged, with the Project Director serving as the sole point of contact. Grants compliance personnel will be kept apprised of rules and policy changes from the program office, EDGAR and in CFR200 Uniform Guidance Circular Regulations
STEM-4-STEM Team Meetings: Project Director will meet with Activity Leads every two weeks during first four months of project, followed by minimum of one meeting per month. Other college staff will be invited as appropriate to these meetings to facilitate the project’s success. Minutes will be posted on the project website.
Special Joint Topic Area Meetings with Feeder Schools: Curriculum alignment and articulation, multiple measures, Common Core. Minutes in Project Director project files.
Comprehensive Project Manual: Project Director will develop, and modify as needed, a <i>Project Manual</i> to specify policies and procedures, allowable and non-allowable costs, provide examples of required forms, and clarify reporting procedures including timelines.
HSI STEM Representation in Standard Governance and Committee Structures will be assured through appropriate committee membership by key HSI STEM project personnel.
Evaluation of Project Personnel will be fully consistent with college policies and procedures, including all negotiated agreements with faculty, administration, and classified staff.
Project Website: The website will serve as a major communications resource. The Project Director will assure that agendas, minutes, schedules, forms, the Grant Manual are all kept current. In addition, standard reference copies of goals, objectives, timelines, expected outcomes will be posted. All types of reports – both internal project and federal- including internal and external reports will also be posted.
Record-Keeping for Monitoring and Reporting
Time/Effort Reports: Monthly <i>Time and Effort Reports</i> that comply with applicable federal regulations will be completed for each employee being paid by STEM-4-STEM funds as approved in grant. Standard time reporting forms used by RC and District. Reports will be submitted to STEM-4-STEM Director each month.
Fiscal and Accounting Records/Procedures will be comprehensive, and will comply with federal, state and college requirements, but are not detailed in this proposal because instructions indicated they were not to be included. All records will be available for audit.
Monthly Progress Reports: Monthly <i>Progress Reports</i> will be completed by the Activity Leads and submitted to Project Director. These reports will reflect progress toward objectives stated in approved proposal. Travel data and use of consultants (reports or information received) should be attached to the reports. Progress related to acquisition and installation of equipment, progress on construction, development and piloting of new practices, and formative evaluation issues (such as collection of baseline data) will be included. Unanticipated problems, delays, alternative solutions, and any requests for assistance should also be noted.
Semi Annual (Semester) Executive Summary Reports: Project Director will synthesize reports from Activity Leads into a two-page <i>STEM-4-STEM Executive Summary Report</i> to be

distributed to appropriate college administrators and all project staff. This report will be a brief summary composite of monthly reports, reflecting overall progress toward objectives.

Annual Performance Reports: Electronically submitted each Spring for documentation of substantial progress toward achievement of objectives to assure continued funding.

Advisory Committee: The president will appoint an Advisory Committee tasked to: help communicate with campus constituencies about progress of grant activities; serve as a resource for Project Director and Activity Teams; make recommendations regarding personnel, expenditures, and consultants as appropriate; make recommendations for needed

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|---|
| <p style="text-align: center;">Advisory Committee
<i>College President Appoints</i></p> <ul style="list-style-type: none"> • 1 English faculty rep • 1 Math faculty rep • 1 Science faculty rep • 1 Counseling rep • 1 Admin representative • 1 Fiscal office rep • 1 IR representative • Project Director |
|---|

modifications to the project, based upon internal and external evaluation reports; and assist with institutionalization issues at Reedley College impacted campuses in both Reedley and Madera. The Committee will meet monthly for the first three months, and quarterly thereafter.

Authority, Effectiveness of Implementation & Administrative Support	
Authority of Project Director including Access to the President	Reedley President Caldwell, Vice-President of Instruction Dekker, and Vice President of Student Services Habib will assure that project key personnel are given sufficient authority to conduct the project effectively. Project Director Dr. John Heathcote will work closely with college executives. One key to project success is the selection of leadership position John Heathcote as Project Director, who brings strong verbal and communication skills, team building and leadership skills, a background in service and outreach to underserved minority populations, experience in both instruction and student services. Dr. Heathcote taught engineering, physics and mathematics at Reedley since 2000 and is highly respected by all faculty, staff and students. In addition, he has served as chair of the Math, Computer Science, and Engineering Department. Dr. Heathcote has a Doctorate in Materials Engineering, UC Santa Barbara, B.S., Metallurgical Engineering, Purdue University.
Authority of Principle Investigator	Dr. Ignacio Hernandez will coordinate all research activities directly through the auspices of the STEM-4-STEM Coordinator/Counselor and will have access to all student participant and program records. In this task he will be supported by the RC IR department and its staff.
Authority of Activity Leads	Activity Component Leads (English/Math/ESL/Library) will have the authority to lead each of their Activities as diagrammed on the Organizational Chart, in coordination with appropriate departments and



<i>including Access to the President</i>	service units, as well as the Project Director. These key individuals will also have access to the President if her direct assistance is needed.
<u>Faculty-Led Implementation Teams</u>	Effectiveness of project design and monitoring is bolstered by direct involvement of department and faculty in design and implementation. When those responsible for post-grant continuation are part of the planning, piloting, and implementation during the sixty month grant, both effectiveness and sustainability will increase. The Evaluation Plan provides a flow diagram showing the monitoring and continuous improvement cycle including the key roles of the Activity Component Leads.
<u>Administrative Support Assistance:</u> <i>(in-kind contribution of 10% by RC)</i> Under supervision of Project Director, this individual will compile and review reports; maintain records of STEM-4-STEM expenditures; assist with timely processing of purchase requests and approval processes; review and check forms, documents, and records for accuracy and will serve as the communications hub for the cooperative project staffs– arranging logistics for joint meetings, preparing and distributing materials, agendas, keeping and posting minutes on the website; maintaining the website.	

(2) The extent to which the time commitments of the project director and principal investigator and other key personnel are appropriate and adequate to meet the objectives of the proposed project.

Reedley College encourages applications from underrepresented persons, and has assembled a strong diverse STEM project team, including traditionally under-represented Hispanic and African-American faculty and staff and women who are faculty in sciences. Resume briefs provided for filled positions.

PROJECT DIRECTOR (100% - Grant Funded)	Dr. John Heathcote
<i>Responsibilities:</i> Assume responsibility for overseeing all aspects of the RC HSI STEM & Articulation program with the ultimate goal of increasing the number of Hispanic students who major in STEM related fields, graduate or transfer to 4-year universities. The Project Director (PD) will have all signing authority and responsibility for the proper conduct of the research, including appropriate use of federal funds and submission of required progress reports related to the project budget. The PD will lead and direct the research project intellectually and logistically and will represent the project in the governance and committee structure and provide academic leadership for faculty involved. Serve as the communications hub for the project; keep all required project records including budget management and expenditures tracking; and assure compliance with federal program regulations. He will oversee coordination of all outreach activities as detailed in the activities plan, working with faculty and student services staff. This STEM faculty leader will work with the PD to develop and oversee STEM outreach activities with local schools (K-12), in the community, and on campus. Working with the STEM Ambassadors, new STEM-related outreach activities will be developed and performed at participating sites. Recruit, select and train RC STEM staff in accordance with district policy; supervise the activities of full-time and part-time RC STEM staff as they identify, recruit and provide designated services for RC STEM participants; oversee the renovation of labs; work with RC STEM staff to plan, organize, and implement college and outreach, instructional activities; collect,	

interpret, and maintain evaluations of the program staff, participants, and target school personnel; Maintain accurate records; assure compliance with district, state, and federal regulations as they pertain to the project; completion of required reports; oversee the evaluation process of RC STEM project including extensive annual data collection and analysis, ongoing formative evaluation, annual external evaluation and implementing procedures for post-grant data collection and reporting.

Qualifications and Professional Experience of Dr. John Heathcote: Taught engineering, physics and mathematics at Reedley since 2000 and is highly respected by all faculty, staff and students. As the lead faculty for the engineering program, he has transferred students to California State University Fresno, California Polytechnic State University San Luis Obispo, UC Davis, UC Merced, UC Berkeley, etc. For the past seven years, Dr. Heathcote founded and grew the *STEM Ambassadors* class. The RC STEM Ambassadors are students majoring in the fields of science, technology, engineering, and mathematics who lead activities and provide tutoring services on and off campus to encourage more students to pursue these careers. In addition, he has served as chair of the Math, Computer Science, and Engineering Department from 2008-2011; February 2000-July 2000, Postdoctoral Researcher, UC, Santa Barbara; October 1997-December 1999, Peace Corps Volunteer, Zimbabwe;

Academic Education: Ph.D., Materials Engineering, UC Santa Barbara, B.S., Metallurgical Engineering, Purdue University. *An experienced STEM Grant Director will work with the PI, assuming responsibility for the significant paperwork, communications logistics, and outreach needed to meet goals and objectives.*

PRINCIPLE INVESTIGATOR (100% - Grant Funded) Dr. Ignacio Hernandez

Responsibilities: Dr. Hernandez is responsible for conducting the research aspects of the grant program should it be funded. This will depend on this stated methodology, but will probably involve the selection of a 'sample set' (which will probably be a sub-set of the overall H.S.I. STEM program pool); conducting any testing/polling/surveys associated with data not already immediately gathered by the school or program; analysis (both qualitative and quantitative) of that data; reporting on results; and seeking publication of the research.

Qualifications and Professional Experience of Dr. Ignacio Hernández. Dr. Hernández is an Assistant Professor in the Department of Educational Leadership in the Kremen School of Education and Human Development at California State University, Fresno. Dr. Hernández teaches courses in Higher Education, Administration, and Leadership (HEAL) and is the Kremen School's Assessment Coordinator. His research explores the social construction of community college leadership, Latina/o leaders, and Hispanic-Serving Institutions, while utilizing critical geography and survey research methods.

Qualifications and Professional Experience of Dr. Ignacio Hernández. Dr. Hernández is an Assistant Professor in the Department of Educational Leadership in the Kremen School of Education and Human Development at California State University, Fresno. Dr. Hernández teaches courses in Higher Education, Administration, and Leadership (HEAL) and is the Kremen School's Assessment Coordinator. His research explores the social construction of community college leadership, Latina/o leaders, and Hispanic-Serving Institutions, while utilizing critical geography and survey research methods.

Academic Education: Ignacio started his postsecondary journey at Mt. San Antonio College (Mt. SAC) and transferred to California State University, Long Beach. At CSULB Ignacio earned a BS in Mathematics and an MS in Counseling with an emphasis in Student Development in Higher Education. In 2013, Dr. Hernández earned his Ph.D. in Higher Education from Iowa State University in Ames, IA. While at Iowa State, Ignacio worked with the Office of Community College Research and Policy and The Graduate College where he worked on institutional initiatives directed at supporting and retaining graduate students of color.



STEM-4-STEM COUNSELOR/COORDINATOR (100% - Grant Funded)

Juan Bedolla

Responsibilities: *Reports to and works closely with Project Director and VP of Student Services.*

Program will provide guidance for minority and low income students to obtain 2 years degrees and transfer to 4-year universities by providing counseling services, workshops, field trips, and mentoring to students in STEM fields. Assists STEM students with career assessment and counseling, educational planning, transfer requirements and appropriate course selection; STEM outreach services to high schools and the community; helps develop STEM related advising materials; presents bilingual workshops for Hispanic student populations, appropriately assists STEM participants and parents in developing educational plans with the primary goal of transferring to institutions of higher education in STEM fields; participates in curriculum development for student development courses; and conducts culturally-sensitive student orientations. Develop mentorship programs for students and help with the development of a STEM Advisory Committee to better serve the STEM grant and students served.

Qualifications and Professional Experience of Juan Bedolla: Mr. Bedolla is a first generation college graduate, resident of the San Joaquin Valley and the son of farm workers. Mr. Bedolla knows firsthand of the barriers that Hispanic students face majoring and transferring in STEM related field. He has over six years' experience working as a counselor at Reedley College in which his responsibilities include academic, career, and personnel counseling. Mr. Bedolla has developed partnerships between RC and various companies to place students in summer internships. He is bilingual and effectively works with bilingual Spanish/English students in college planning.

Academic Education: Masters of Science in Counseling-Marriage - Family Option, CSU, Fresno; B.S. Environmental Health/Industrial Hygiene, CSU, Fresno; A.S. Biology, Reedley College; A.S. Registered Nursing, San Joaquin Valley College, and currently enrolled at CSU, Long Beach in a Master's of Science in Nursing with an option in Psychiatric Mental Health Nurse Practitioner.

**ADJUNCT STEM-4-STEM COUNSELOR/ARTICULATION OFFICER
(100% - Grant Funded)**

To Be Hired

Responsibilities: Be a well-informed resource person for students, campus faculty, administration, counseling/advising staff, and transfer center personnel on transfer curriculum, articulation, and related matters; Disseminate current, accurate, articulation data to students, staff, appropriate departments, and campuses; Serve on appropriate campus committees such as but not limited to the Curriculum Committee, the STEM Advisory Committee to provide input and to receive information about proposed changes in campus policy and curriculum.

SECTION V: QUALITY OF PROJECT EVALUATION

(1) Goals, objectives, and outcomes are clearly specified and measurable.

Goals and Objectives: Consistent with recommendations by the Institute of Education Science, we have a few *concise project objectives directly related to project goals, rather than a long list of tangential objectives.* Management and Evaluation plans are based on mechanisms to collect feedback (outcomes and qualitative) for continuous improvement. Annual goals are presented for reference and use in tracking progress toward overall objectives, noted on the following pages.



STEM Gap: TOO FEW RC STUDENTS ENROLL IN STEM DEGREES SEEKING MAJORS

Fall 2015 Baseline: Hispanics 255 and Low income 144

Goal 1: Increase number of Reedley College Hispanic and Low income students enrolling in STEM degree seeking majors.

Objective 1: By 2021, Reedley College will have increased the number of Hispanic and Low Income students in STEM degrees seeking majors by 25%.

Proposed Annual Benchmarks for STEM Degrees:

Population	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
	<i>Degrees</i>	<i>Degrees</i>	<i>Degrees</i>	<i>Degrees</i>	<i>Degrees</i>
Hispanic	268	280	393	306	319
Low income	151	158	165	172	180

STEM Gap: LOW RETENTION OF HISPANIC & LOW INCOME STUDENTS IN STEM

Baseline: Fall 2014 to Fall 2015, 61% Hisp. & 64% Low-Inc Students remained STEM majors

Goal 2: Increase Hispanic and Low income student's retention in STEM from Fall to Fall.

Objective 2: By 2021, first time, full-time, STEM major, Hispanic and low income students retention will increase by 25% from Fall to Fall.

Measures begin in year two. Proposed Annual Benchmarks for Hispanic and Low Income Retention in STEM majors:

Population	2017-2018	2018-2019	2019-2020	2020-2021
Hispanic	67%	70%	73%	76%
Low income	70%	74%	77%	80%

STEM Gap: TOO FEW RC STUDENTS ATTAIN DEGREES IN STEM FIELDS

Spring 2015 Baseline: Hispanics 74 stds. and Low income 42 stds.

Goal 3: Increase number of Reedley College Hispanic and Low income students awarded degrees in STEM fields.

Objective 3: By 2021, Reedley College will have increased the annual number of STEM related degrees awarded by 50% over the 2015

Measures begin in year two. Proposed Annual Benchmarks for STEM Degrees:

Population	2017-2018	2018-2019	2019-2020	2020-2021
	<i>Degrees</i>	<i>Degrees</i>	<i>Degrees</i>	<i>Degrees</i>
Hispanic	81	89	96	104
Low income	46	50	55	59

STEM Gap: TOO FEW REEDLEY STUDENTS TRANSFER IN STEM FIELDS.

Baseline: 2014-2015, Hispanic 21% and Low income 50% transferred in STEM fields

Goal 4: Increase number of RC Hispanic and Low Income stds. transferring in STEM fields.

Objective 4: By 2021, Reedley College will have increased the annual number of STEM related degrees awarded by 30% over the 2015 baseline. Transfers in newly articulated programs to both public and private four-year institutions will be counted.

Proposed Transfer Benchmarks:

Populations	2018-2019	2019-2020	2020-2021
Hispanic	23%	25%	27%
Low income	55%	60%	65%

STEM Gap: THE COLLEGE NEEDS TO DEVELOPMENT NEW ARTICULATED TRANSFER PROGRAMS IN STEM EMERGING FIELDS

Baseline: Only 7 Articulated Associate Degree Transfers

Goal 5: To develop new transfer programs in emerging STEM fields and articulate curriculum with four-year colleges and universities.

Objective 5: By 2021, develop two new STEM degree programs, articulated for transfer and a minimum of twenty new course articulations across a minimum of five departments.

Proposed Benchmarks

2017-2018	2019-2020
By Year Three, to Have Developed and Articulated for Transfer To CSUF A Nutrition and Dietetics and Computer Science	By Year Five to Have Upgraded the Geology and Public Health Science

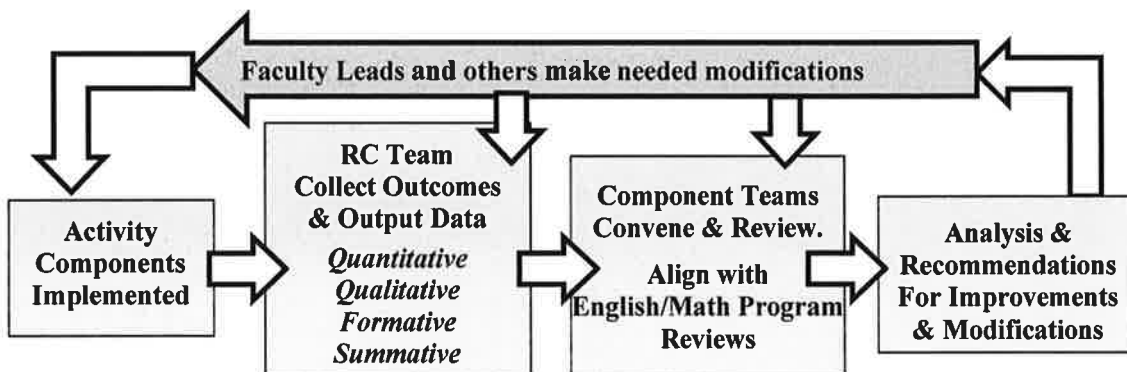
(2) Methods of evaluation are thorough, feasible, and appropriate to the goals, objectives, and outcomes of the proposed project.

Objectives Relationship to Problems & Goals of Comprehensive Development Plan

Evaluation Plan Design: The STEM-4-STEM project centers on implementation of culturally responsive and researched strategies to strengthen success in and progression beyond, entry level English & Reading, and Math courses in which students gain critical skills necessary for success in achieving educational goals. The focus in on Hispanic and low income students, many of whom have English language deficits.



Continuous Improvement Evaluation provides the ability to identify outcomes and anticipate ways to measure them, providing project staff in developing and implementing a wide range of strategies with a clear understanding of both project goals and objectives and planned targets to measure success/outcomes of their own strategy component. **Modifications are made consciously and intentionally, with the goal of improvement** as noted below.



Institute of Education Science’s (IES) Evaluation Standards: This evaluation design also adheres to the Institute of Education Science’s (IES) *scientifically valid education evaluation methods* recommended by ED:

IES²⁵states that Scientifically Valid Education Evaluation:	How this evaluation plan meets scientifically valid evaluation standards:
Adheres to the highest possible standards of quality with respect to research design and statistical analysis.	Comprehensive analysis and use of both output and outcomes data , rather than only publishing/distributing outcomes data.
Provides adequate description of programs evaluated & examines relationship between program implementation & program impacts.	Underlying premise of STEM-4-STEM initiative is to make fundamental changes to positively impact success of students, infusing researched high impact strategies.
Provides an analysis of the results achieved by the program with respect to projected outcomes and impacts.	Appropriate decision-makers and faculty will make modifications & improvements based upon results of evaluation analysis.
A third party evaluation , designed and conducted by a professional independent from staff/faculty implementing project, but familiar with scope of grant.	A highly experienced external evaluation group at Fresno State University has been selected, based upon their strong third party evaluations on other RC projects.
Multiple measures are used with combinations of scientifically valid & reliable methods.	<u>Surveys, focus groups, questionnaires</u> , cohort tracking, on-going analysis of student outcomes informing continuing improvement.

Goals & Objectives
The State Chancellor’s Office compiles and posts <i>California Community College Scorecard Outcomes</i> each Spring, which will provide progress data on the five-year Institutional Objectives - improvements over 2015 Scorecard. This data is updated annually at http://scorecard.cccco.edu/scorecard.aspx .
Objective 1: By 2021, Reedley College will have increased the number of Hispanic and Low Income students in STEM degrees seeking majors by 25%.

²⁵ IES information retrieved: <http://www.ed.gov/about/offices/list/ies/index.html> 1/2012



Objective 2: By 2021, first time, full-time, STEM major, Hispanic and low income students retention will increase by 25% from Fall to Fall.
Objective 3: By 2021, Reedley College will have increased the annual number of STEM related degrees awarded by 50% over the 2015.
Objective 4: Beginning in the third grant year, Reedley College will increase the number of transfers in STEM fields by 30% over the 2015 baseline. Transfers in newly articulated programs to both public and private four-year institutions will be counted.
Objective 5: By 2021, develop two new STEM degree programs, articulated for transfer and a minimum of twenty new course articulations across a minimum of five departments.

Activity Objectives: Data Elements & Collection Procedures
Degree, Retention, and Transfer Objectives: Shorter term objectives will be by semester and year, measuring success rates in pilot sections of new practices compared against historical base-lines. Success and progression flow tracking will continue across semesters within academic year and retention/sequential progression into following fall term, <i>page 46</i> .
High Need Student Supports: Additional to measureable <u>outcomes</u> objectives, see details of <u>outputs</u> measures for increased student support to high need students detailed <i>page 46</i> .
Capacity/Facilities: Facilities expansion timetables, and constructions details in budget narrative. Output measures will be adherence to construction timelines.
Activity Objectives: Responsibility and Data Elements
Collection of ‘Static’ Institutional Data for Longitudinal Tracking: Information gathered during admission, assessment, & enrollment including: ethnicity, test scores, grades, retention and persistence, graduation, and transfer. Consistent set of data elements collected each term allow longitudinal comparisons over 5-yr period. RESPONSIBILITY: Static data will be gathered as prescribed and requested by Reedley Office of Institutional Research.
Collection and Analysis of ‘Dynamic’ and Project Data: Information which is related to a specific term or terms for a particular pilot project or segment of a pilot initiative. Data will be collected via a variety of survey instruments, including student satisfaction assessments, classroom-based research techniques, and focus groups. Quantifiable outcomes will be measured by pre- and post-comparisons, time analyses (e.g. time on task study hours), and achievement of stated objectives. Qualitative Assessments will collect the voices of students, faculty, staff, and community to be integrated into evaluation/improvement cycle. RESPONSIBILITY: Faculty leads will work with Project Director, Principle Investigator, IR and External Evaluator to design component specific qualitative measures.

Third-Party Evaluation: We have chosen a highly credentialed and experienced external evaluator, Michael Gaudette, who is knowledgeable of the shared service area, the colleges partnering in this effort, and with Hispanic Serving Institution STEM grants.

Mike Gaudette, Independent External Evaluator	
<i>Academic</i>	B.S. - Chemistry, University of Portland (OR), 1976
<i>Education and</i>	M.B.A. – Management, City University (WA), 1991
<i>Credentials</i>	A.B.D. – Community College Leadership, Oregon State University, 1994



<i>Related Professional Experiences</i>	1987-present, Higher Education Consultant and External Evaluator 1981-1991, Instructor, Centralia College (WA) 1991-2006, Dean of Institutional Advancement, Southwestern Oregon Community College (retired)
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**Timelines for Involvement From External Evaluator
And Scope of External Evaluation Contract**

The Evaluator will meet with the Advisory Committee, Project Staff, and Activity Faculty Leads during visits the colleges. In addition, the evaluator will meet with Vice-Presidents and Deans to assess their satisfaction and concerns with the project. Visitations and reports will be completed on a cycle to allow inclusion of independent evaluation in Annual Reports submitted to the Program Office. Each October the written evaluation report covering the previous year will be submitted to the Project Director, Marie Byrd, as well as the Instructional Vice President. The Final Summative Report will be written in October/November 2021.

Area of Evaluation	Deliverables
<i>Objectives</i>	Assessment of progress in meeting objectives, both as individual institutions and cooperatively.
<i>Methods and Strategies</i>	Assessment of individual project activities based on data collection and statistical analysis; Assessment of overall institutional impact of project on retention/student success. Including assessment of cooperative aspects of the project.
<i>Continuous Improvement</i>	Recommendations for adjustments and modifications
<i>Institutionalization & Sustainability: Practices, Facilities and Programs</i>	Assessment of sustainability of the project following cessation of federal funding, including improvements to sustain increased completion and productivity

Justification for annual external evaluation: Each year there will be different faculty members participating in the pilots of new student support programs, accelerated curriculum and methods projects, new departments/disciplines involved in the cross-curricular pairings, and new remodeling and building initiatives with integration of revised pedagogy of STEM courses. There will be sufficient change each year to warrant annual involvement of third party evaluator.

(3) The extent to which the methods of evaluation will, if well-implemented, produce evidence about the project’s effectiveness that would meet the What Works Clearinghouse Evidence Standards with reservations.

Utilizing institutional data from RC, MC, and SCCCD the PI (Dr. Ignacio Hernández) will carry out a multi-method, longitudinal research project during the five-year project award

period. The research project will utilize a quasi-experimental design where group assignment is not random; students in the STEM-4-STEM program may receive interventions all other students may not. The data collection strategy is meant to produce variables to carry out multiple analyses consistent with Nuñez and Bowers (2011) who explored what lead high school students to enroll in Hispanic Serving Institutions and Dowd (2011) who examined supportive STEM community college transfer pathways. The variables will be *demographic, familial and academic capital, individual habitus, organizational habitus, geographic*. Methods will be both quantitative and qualitative in order to meet What Works Clearinghouse standards as well as to develop research-based interventions at RC and MC after the project award period.

Subjects in the research project will include *students, parents, counselors and other student services professionals, STEM instructors, and campus administrators* from RC and MC. Each of these groups will provide rich, meaningful sources of evidence to address the multiple student outcomes related to STEM-4-STEM participation. The study will be guided by the research on Minority and Hispanic Serving Institutions.

Hispanic Serving Institutions: The population of Latino²⁶ students in the United States is rapidly growing; however, large discrepancies exist between Latino student enrollments versus degree completion rates, which raise questions about the efficacy of higher education in serving its student populations. As of 2012, 14.9% of students enrolled in degree-granting postsecondary institutions were Hispanics; however, only 9.8% of Hispanics earned a bachelor's degree (NCES, 2013). Additionally, among community colleges in California, Latino students

²⁶ The theoretical and political significance of labels cannot be taken lightly. In light of this context, the term Latino will be the primary term used in this inquiry to describe a heterogeneous community that is richly diverse. The term recognizes the label's history, development, and contestation in order to offer some consistency in the ways in which we name an otherwise diverse set of people. The term "Hispanic" or any other variation of the term will only be used when citing a federal document, which was federally created and is used for reporting purposes.

represented more than 43% of full-time equivalent enrollment (FTE) in 2010; yet only 33% of Latino students successfully transferred to the California State University (CSU) system (Malcom et al., 2013). This discrepancy calls for further research to understand these trends, especially at institutions that enroll a large number of Latino students, namely Hispanic Serving Institutions (HSIs).

HSIs play an important role in educating Latino students because as Contreras, Malcom, and Bensimon (2008) point out, *although HSIs make up only 8% of postsecondary institutions in the U.S., they enroll approximately 54% of all Latino college students*. Researchers indicate that important geographic, social, and demographic factors effect Latino students' decisions to attend HSIs, such as their close proximity to students' families and the perception that they are more accessible and have more welcoming environments for Latino students (Gasman, Bez, & Turner, 2008). *In spite of these designations, Latino students are not obtaining degrees, certificates, and/or transferring to four-year institutions in commensurate levels with their peers* (Malcom et al., 2013).

A handful of studies have found that Hispanic college students in HSIs have increased:

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- Access to mentoring (Laden, 2001)
 - Academic engagement in college (Bridges, Kinzie, Nelson Laird, & Kuh, 2008)
 - Transfer rates to 4-year institutions (Laden et al., 2008),
 - Rates of earning science, technology, engineering, or math (STEM) degrees (Crisp et al., 2009; Dowd, Malcom, & Bensimon, 2010; Hixson, 2009).

Other research, however, suggests that the experiences of students and college personnel in HSIs do not differ significantly from those of their counterparts in Predominantly White Institutions (PWIs) (Hubbard & Stage, 2009; Nelson Laird et al., 2007). Although it is not clear



whether HSIs intentionally promote Hispanic students' success (Contreras et al., 2008), senior administrators at HSIs do express common concerns about students' academic preparation, diversity, enrollment levels, and low graduation rates, as well as limited institutional funding (De Los Santos & De Los Santos, 2003).

Proposed Research Questions: The following research questions guide the inquiry of the effects of the program interventions, namely (1) Development of Acceleration of Math and English Curriculum, (2) Strengthening of Existing STEM Programs and Labs & Improving Articulation, (3) Faculty Development for Improved Pedagogy and Curriculum Development in STEM, (4) Creation of Engineering Center and Improving Math Classrooms, (5) Develop STEM Courses/Support at Madera Community College Center.

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- *RQ1: Effects of high school attendance on transfer outcomes for students who attend RC and transfer to CSUF*

Considering HSI community colleges' substantial role in educating Latina/o and low income students the research process for this project will account for regional factors of RC, MC, and the Central Valley, in general. To further explain how students negotiate their educational trajectories, the researcher will apply Bourdieu's concept of *habitus* -- an internalized set of perceptions and expectations about one's life opportunities (Bourdieu, 1977a; Bourdieu & Passeron, 1977).

High school environments also influence a student's habitus through providing a student with access to academic, cultural, and social capital; and through socializing him or her toward certain views about college possibilities (McDonough, 1997). Thus, in its role as a transmitter of non-familial capital, a school has an organizational habitus (McDonough, 1997).

- *RQ2: Factors influencing organizational habitus of high schools whose students attend RC and transfer to CSUF.*

Organizational habitus involves a high school's capacity to academically prepare and to frame students' perceptions and knowledge about various college options. High school contexts indeed have a powerful effect on sector and selectivity of college choice (e.g., Engberg & Wolniak, 2009; McDonough, 1997; Perna & Titus, 2005), suggesting that organizational habitus is an appropriate framework to examine the high school's influence on college choice.

- *RQ3: Impact of student services professionals on institutional culture of RC/MC as an HSI community college*

Student services professionals in HSI community colleges support and facilitate Latino student success. Specifically focusing on the role of STEM-4-STEM program staff, these individuals provide an important perspective on how HSI imperatives are embedded, supported, and led throughout the colleges. STEM-4-STEM program staff and other student services professionals are responsible for incorporating Hispanic-servingness into structures, policies, and practices within their organizational missions while supporting the professional development of their colleagues.

Budget Narrative File(s)

* **Mandatory Budget Narrative Filename:**

[Add Mandatory Budget Narrative](#)

[Delete Mandatory Budget Narrative](#)

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To add more Budget Narrative attachments, please use the attachment buttons below.

[Add Optional Budget Narrative](#)

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**PERSONNEL**

All of the salaries presented are in accordance with the salary scale of the Reedley College – State Center Community College District and consistent with salaries paid to district employees with similar job titles and functions as district-wide – based upon negotiated contracts - and are commensurate with education, qualifications, and experience required for the positions. Salaries are based on the most recent salary schedules published July 1, 2015. The personnel structure proposed provides sufficient support for the comprehensive and extensive attention required to ensure the academic and personal success of Reedley College STEM Programs.

- **Project Director - 100% Grant Funded (177 days):** Reports directly to the Dean of Math, Science and Engineering. Dr. John Heathcote will be fully responsible for the project as Project Director and will handle all communication with the grant monitor at the Education Department in Washington DC. He will make sure that goals and timelines are met precisely and that draw-downs, and internal and external reporting are performed in a meticulous and timely manner. Dr. Heathcote will have adequate delegated authority to carry out the responsibilities of the position; He will serve as the communications hub for the project; keep all required project records including budget management and expenditures tracking; and assure compliance with federal program regulations. The PD will oversee coordination of all outreach activities as detailed in the activities plan, working with faculty and student services staff. This will be a full-time/12 month position. This position will be terminated at the end of the grant.
- **STEM-4-STEM Counselor/Coordinator - 100% Grant Funded (177 days):** Reports directly to Dean of Math, Science and Engineering and works closely with PD. Assisting STEM students with career assessment and counseling, educational planning, transfer requirements and appropriate course selection; performing STEM outreach services to high schools and the community; assisting with the development of related advising materials; presenting workshops for Hispanic student populations, appropriately assist STEM participants and parents in developing appropriate educational plans with the primary goal of transferring to institutions of higher education in STEM fields; participating in curriculum development for student development courses; and conducting culturally-responsive student orientations. Will work in an environment that requires the highest level of integrity, ethical practices, innovation, collegiality, teamwork, and adaptability to working with Hispanic students in support of student success. Based on positive outcomes of the project activities, this position will be institutionalized by the campus when the grant ends.
- **Adjunct STEM Counselor - 100% Grant Funded (23 hours/week for 44 weeks):** The adjunct STEM counselor is going to be a faculty position for 10 LHE, 23 hours per week. Serve as an advocate for the transfer students and, through the articulation process, see to ease the student's transition; Be a well-informed resource person for students, campus faculty, administration, counseling/advising staff, and transfer center personnel on transfer curriculum, articulation, and related matters; Disseminate current, accurate, articulation data to students, staff, appropriate departments, and campuses; Serve on



appropriate campus committees such as but not limited to the Curriculum Committee, the STEM Advisory Committee to provide input and to receive information about proposed changes in campus policy and curriculum; Serve as a consultant to STEM faculty, academic, vocational and student services units, providing needed materials and information about course articulation proposals and acceptances; Facilitate campus participation in inter-segmental programs such as C-ID, regional transfer fairs; Associate Degree for Transfer activities; Manage and update campus articulation data; Assist the articulation officer in moving new curriculum through the curriculum approval process; Be a gatekeeper of course outlines, pre-college assessment testing, post-secondary assessment testing, ASSIST, and other articulation-related data; Serve as a proactive agent for enhancing and improving existing articulation; Initiate faculty-approved articulation agreements between institutions of higher education; Serve as an advocate for the faculty and campus STEM programs that need academic input to produce transferable students; Serve as an advocate for the other articulating institution, responsible for accurately communicating and conveying information and concerns about that institution's curriculum to the faculty; Serve as a moderator and mediator of problems or disagreements between the faculties of the home campus and the articulating institutions; Be cognizant of the Introduction to California Articulation Policies and Procedures Handbook; Attend and participate in conferences and workshops on articulation issues. Based on positive outcomes of the project activities, this position will be institutionalized by the campus when the grant ends.

- **Physics Instructor - Hourly Grant Funded (36 weeks):** The physics instructor will be tasked for 10.05 Lecture Hour Equivalents during the academic year teaching sections of physics and engineering so that the campus may grow the program and expand student pathways at Madera Community College Center (MCCC) for transfer and degree completion. Based on positive outcomes of the project activities, this position will be institutionalized by the campus when the grant ends.
- **Part Time Permanent Lab Technician – 50% for 10 months (23 hours/week):** Performs a variety of duties related to the physics program including but not limited to: assisting with demonstration of proper techniques and use of tools and equipment for students during laboratory classes; inventorying and maintaining supplies and equipment; inspecting experiments and student work; preparing a variety of reagents and solutions for classroom and laboratory demonstrations and experiments; preparing, maintaining, and disposing of live cultures; maintaining stock rooms, laboratories, and other assigned areas in a clean and orderly condition; operating a variety of equipment; requisitioning, receiving, cataloging, organizing, storing, issuing and maintaining laboratory equipment, instruments, tools, solutions, supplies and materials; inventorying lab equipment and supplies; collecting, storing, and coordinating the disposal of hazardous chemicals and materials; assisting with managing and record keeping of toxic waste in accordance with regulations and other guidelines; implements chemical hygiene, hazard communication and blood borne pathogen exposure programs, and ensuring and enforcing security and safety of the lab according to established procedures, policies, and laws. Screening, training, evaluating, and providing work direction



for student workers. Performing other duties as needed. Based on positive outcomes of the project activities, this position will be institutionalized by the campus when the grant ends.

- **STEM Student Employees– Hourly (approximately 6,800 hours, in Y1; reducing annually to an estimated at 5,000 hours in Y5 due to CA legislatively required wage increases) STEM Mentors, STEM Ambassadors, STEM Embedded Tutors (Supplemental Instruction – SI) and STEM Tutors:** Provide individual and group tutorial assistance in content areas as well as study skills development, learning strategies, organizational skills, and time management; attend regularly scheduled training sessions and staff meetings; maintain records and reports on tutorial contacts and participant progress; STEM Mentor and Ambassadors are to work with RC/MC STEM students in special projects listed in outreach. Student tutors will support student success projects proposed in this grant including Math and English (ME) First and Accelerated pathways. Positions will be sustained through College Work-study.

Personnel	Item	Funds Requested				
		Year 1	Year 2	Year 3	Year 4	Year 5
	STEM Director (100%)	70,216	73,003	76,547	80,158	83,807
	STEM-4-STEM Counselor/Coordinator (100%)*	72,128	74,918	78,478	82,113	85,807
	Adjunct STEM Counselor (100% - Part Time)	48,242	48,242	48,724	49,211	49,703
	Adjunct Physics Instructor (Hourly)*	20,555	20,555	20,761	20,969	21,179
	PPT Lab Technician (50% for 10 months)*	23,396	24,572	26,044	27,634	29,304
	Student Employees (Hourly)*	75,000	75,000	75,000	75,000	75,000
	Personnel Totals	\$309,537	\$316,290	\$325,554	\$335,085	\$344,800

**Activities and strategies related to evidence-based practices (based on the projects Competitive Preference Priority) are noted for consideration.*

FRINGE BENEFITS

Per State Center Community College District policy: The Coordinator will be Certificated Categorical and has a benefit package of 16.09% based on salary which includes retirement, required taxes mentioned below, and a Health and Welfare package of \$13,798 per employee. The full-time Counselor/Coordinator is certificated and receives a benefits package of 16.09% of their salary, and a Health and Welfare package of \$13,798 per employee. Student employees do receive worker's comp benefits of 2.01%. Benefits are based on the classification of position. Full-time positions include calculations of federal, state, and local taxes. Part-time staff have lower requirements on federal, state, and local taxes. Fringe benefits for full-time include: Retirement (STRS or PERS), FICA, SUI,



Workers Compensation, plus a Health and Welfare package that includes medical, dental, vision, and life insurance.. Fringe benefits for part-time employees include: Retirement (STRS, PERS, or PARS) FICA, SUI and Workers Compensation.

Benefits	Item	Funds Requested				
		Year 1	Year 2	Year 3	Year 4	Year 5
	STEM Director (100%)	25,087	26,886	28,938	31,135	32,738
	STEM-4-STEM Counselor/Coordinator (100%)*	25,395	27,229	29,320	31,558	33,190
	Adjunct STEM Counselor (100% - Part Time)	7,762	8,655	9,642	10,649	11,238
	Adjunct Physics Instructor (Hourly)*	3,307	3,688	4,109	4,538	4,789
	PPT Lab Technician (50% for 10 months)*	5,325	5,613	6,314	7,142	8,042
	Student Employees (Hourly)*	1,508	1,508	1,508	1,508	1,508
	Benefits Totals	\$68,384	\$73,579	\$79,831	\$86,530	\$91,505

*Activities and strategies related to evidence-based practices (based on the projects Competitive Preference Priority) are noted for consideration.

TRAVEL

YEAR ONE THROUGH FIVE

Professional Development/National Meetings/Trainings:

Comprehensive professional development curriculum will include the following conferences/trainings/workshops/examples, as well as others. Fourteen faculty/staff per year @ \$2,500 (travel, lodging, per diem, registration fees). **\$35,000/year:**

Strategies for student learning and achievement (selected examples):

- Hispanic-Serving Institutions (HSI) Central and Northern California Community College Summit-Allows STEM faculty and staff to share ideas about advocating for student success at HSI California community colleges.
- College Reading and Learning Association (CRLA) - RC is in the process of applying for the CRLA certification. At this conference, the faculty learn the requirements and continued successful methods for a CRLA approved tutor training program.
- American Mathematical Association of Two-Year Colleges (AMATYC) - provides workshop sessions on innovative ways to enhance conceptual understanding and active learning in statistics.
- Along with UC/CSU/Industry study trips, RC will collaborate with Bitwise Industries. Students will partake in introductory and intermediate technology courses such as HTML, CSS and Javascript.to provide opportunities into web design,



programming and development. Technology courses will be project-based and taught by industry experts. UC/CSU/Industry study trips.

Academic Advising (selected examples):

- Engineering Liaison Council (ELC) Meeting and NSF California Lower-Division Engineering Curriculum Articulation Workshop. This meeting brings together deans from the colleges of engineering of the UCs, CSUs and private universities and engineering instructors and counselors from California Community Colleges to improve articulation between two- and four-year programs of engineering.
- The National Academic Advising Association (NACADA) Annual Conference-provides a forum for discussion, debate, and the exchange of ideas pertaining to higher education academic advising.

Embedding of First Year Students (selected examples):

- Annual First Year Engineering Experience (FYEE) Conference-Academic and industry representatives discuss and share relevant topics in the first year engineering experience. Participants include college deans, department chairs, student service professionals, advisors, faculty in engineering and engineering technology, K-12 teachers, and industry leaders from throughout the country.
- Annual Conference on The First-Year Experience (FYE) - provides an ongoing forum where higher education professionals can share experiences, concerns, and accomplishments related to supporting student learning, development, and success in the first college year.

Faculty Career Enhancement (selected examples):

- American Astronomical Society (AAS) - benefits students by enriching the instructor's understanding of current topics and enhancing instructional techniques in both physics and astronomy.
- California Acceleration Project Training (CAPT) -to increase the number of students completing college English and Math.
- DISCOVERe Training-Hosted by California State University, Fresno (CSUF), faculty members from across redesign courses for the Tablet Program to facilitate student success both in content mastery and technology skill-set building. The Technology Innovations for Learning & Teaching (TILT) team will be the primary facilitator of faculty support and training for the Tablet Program.
- Summer Tablet Program Institute - Faculty will participate in a one-week intensive institute-use tablets in an actual classroom environment; develop expertise using the apps they will actual use in the classroom; and continue the course redesign process.

Student Trips

Travel to museums, industry partners, CSU/UC study trips, conferences, and other academic development opportunities. Eight per years @ \$2,000 (travel, registration fees). **\$16,000/year**



Bitwise Summer Institute

2 weeks of computer technology training provided by community partner during the summer; Monday - Friday; 9:00am – 12:00pm
50 students x \$40.00 = \$20,000/year

Travel	Funds Requested				
	Year 1	Year 2	Year 3	Year 4	Year 5
Professional Development/National Meetings/Trainings	35,000	35,000	35,000	35,000	35,000
Student Trips*	16,000	16,000	16,000	16,000	16,000
Bitwise Summer Institute*	20,000	20,000	20,000	20,000	20,000
Travel Totals	\$71,000	\$71,000	\$71,000	\$71,000	\$71,000

**Activities and strategies related to evidence-based practices (based on the projects Competitive Preference Priority) are noted for consideration.*

EQUIPMENT

YEAR 1: \$199,900

BIOLOGY: \$47,900

- **Muscle torso model:** Deluxe human torso selected will depict both superficial and deep muscles and can be used for study of the vertebrae, spinal cord, spinal nerves and vertebral arteries, and discover the internal structures of the brain and much more. The deluxe dual-sex torso is complete as a tool for human anatomy education.
- **Cold room shelving:** Current damages shelving is causing contamination of preserved specimens. Proposed shelves are designed to prevent issues of this nature and will allow for longer use of specimens.
- **Refrigerator for Life Science (LFS) Room:** Many of our labs require reagents to be chilled either during or after the lab. A basic refrigerator/freezer combination will serve student needs for hands-on projects.
- **Whiteboards:** The current whiteboard in LFS C is almost completely covered by the projector screen. A new whiteboard would be installed in the available wall space adjacent to the existing one in order to use multiple teaching tools for students.



- **Cooling system for Greenhouse:** Given our ambient summer temperatures of over 100 degrees, it is impossible to grow many plants in the greenhouse for half the year because the temperatures rise too high under the glass. A cooling system would enable us to grow plants year-round for use by classes.
- **Computers w/lab cart:** *Madera Center* - Allows students to process data with specialized software and perform real-time data analyses. Special software is used for certain labs and require computers to demonstrate key concepts.

CHEMISTRY: \$124,000

All students who take the following chemistry classes will benefit from the equipment: elementary chemistry, introduction to general chemistry, introductory organic and biological chemistry, general chemistry, general chemistry and qualitative analysis, organic chemistry laboratory I and II.

- **Whiteboards:** *Madera Center* - The current whiteboards in chemistry labs are almost completely covered by the projector screen. New whiteboards would be installed in the available wall space in order to use multiple teaching tools for students.
- **Microscopes:** *Madera Center* - The microscopes in the microbiology lab are of low quality and are in poor shape. Fully functioning microscopes will better prepare students taking microbiology.
- **Acid Storage Cabinets:** *Madera Center* - Acid have to be stored away from other chemicals and in order to do this they are stored in an acid cabinet which self contains the acid in case of a spill. Most acids are highly reactive when they come in contact with other chemicals so from a safety standpoint it is prudent to store the acids in an acid cabinet.
- **Gas Chromatography Instrument with manual injector (GC):** Gives students' access to equipment that they wouldn't receive at many other community colleges and allows instructors to teach GC techniques. The GC will provide experiences for students who are looking for jobs in a lab with a focus on GC. A gas chromatograph is a chemical analysis instrument for separating chemicals in a complex sample. We do not have a stand-alone GC for students to practice direct injection which is something they will commonly find in industry. We would like to teach students how to manually inject their samples with a needle which we cannot do as we have an auto sampler on our current system. The advantage of the manual injection vs the auto sampler is the student can inject a different amount of sample in the GC to get a variation on peak size which lets the calculate % of compound they have produced.
- **Dishwasher:** Clean glassware is essential to student success in the lab. Steam scrubber glassware washers are designed to wash and dry general purpose lab ware. They have stainless steel top and bottom racks that accommodate basket inserts for a



wide variety of glassware shapes and sizes, primarily beakers and other wide-mouth glassware; this dishwasher is specifically built to withstand chemicals that are used in lab.

- **Automated Mel-temp Instrument (instructor use):** An automated mel-temp allows the instructor to analyze student samples (e.g. for a lab practical). The semi-automated nature of this instrument allows for a timely analysis of samples. The Stuart SMP40 automatic melting point apparatus uses the latest technology in digital image processing to accurately identify the melt of up to three samples simultaneously. Featuring a 5.7 inch color VGA display, users can watch the melt on the display in real time or view it later via an automatically saved AVI file that can be replayed either on the unit or via PC, providing traceability long after the sample has gone. Because we are grading student products based on accuracy and precision we need to be able to test student samples in a timely manner in order to provide appropriate feedback. The automated mel-temp allows for multiple samples at one time ensuring that we can see if the students are accurately reporting there melting points on their labs.
- **Explosion proof fridge:** Thermostat and compressor components are isolated within a vapor-proof enclosure, electrical connections are hardwired to prevent sparking and accidental disconnection, magnetic vinyl gaskets for positive door seal, chlorofluorocarbon free foam and refrigerant, and manual defrost. We currently use a normal household refrigerator that has no protections against explosions. Volatile chemicals are stored in the fridge and a spark of any sort from the fridge starting up could cause a serious explosion, it is a huge safety hazard.
- **Lab chairs:** Current chairs are a safety hazard and are falling apart on students. Chairs will be replaced with 9 to 5 precept armless task stools with foot ring, height adjustment and glides. Task stool holds up to 300 pounds. Students will be better equipped to learn.

NATURAL RESOURCES: \$28,000

- **Living Streams:** Currently, the Forestry & Natural Resources Program offers one Wildlife Management class that serves as an introduction to the field of wildlife and fisheries biology. With a living stream we would be able to implement a fisheries component to the Wildlife Management and Watershed Ecology classes, provide a more in depth introduction to fisheries management techniques and help students understand the concept of carrying capacities and bioenergetics. With the living stream we could raise sport fish to be released into the Kings River to supplement the fishery, tag fish prior to release for mark and recapture studies and monitor growth rates of fish to demonstrate effects of temperature on metabolic activities.

**YEAR 2: \$125,500*****BIOLOGY: \$37,500***

- **Computers w/lab cart:** Allows students to process data with specialized software and perform real-time data analyses. Special software is used for certain labs and require computers to demonstrate key concepts.

MATH AND ENGLISH COMPLETION FIRST: \$15,000

- **Computers:** The project concept and design is grounded in the tenets of the Competitive Preference Priority. All entering students will be required to enroll in both English and Math courses into which they are placed based on entrance assessments – rather than being allowed to delay the recommended placement and enroll in college-credit courses for which they are not ready, their success rate will climb. Success rates will increase since college-level courses require college-level English and Mathematics skills. The College will ensure that students are addressing their critical core courses first before being allowed to enroll in advanced courses that require these fundamental skills to be successful. Please note, that funded projects will not begin until October 2016, necessitating the start of this critical element in the second year of the grant.

CHEMISTRY: \$73,000

- **Lab Chairs:** Current chairs are a safety hazard and are falling apart on students. Chairs will be replaced with 9 to 5 precept armless task stools with foot ring, height adjustment and glides. Task stool holds up to 300 pounds. Students will be better equipped to learn.
- **Microscopes:** The microscopes in the microbiology lab are of low quality and are in poor shape. Fully functioning microscopes will better prepare students taking microbiology.
- **DISCOVERe Tablet Program:** Classroom sets of tablets for students to use as part of STEM instruction. RC faculty have collaborated with Fresno State (largest STEM transfer institution) to promote seamless education through technology. RC faculty will train with FSU faculty in their DISCOVERe training to use iPads or Surfaces for instruction. Students will use the same technology when they transfer to Fresno State.

**YEAR 3: \$214,500*****CHEMISTRY: \$57,500***

- **Computers w/lab cart:** Allows students to process data with specialized software and perform real-time data analyses. Special software is used for certain labs and require computers to demonstrate key concepts.
- **Lab Chairs:** Current chairs are a safety hazard and are falling apart on students. Chairs will be replaced with 9 to 5 precept armless task stools with foot ring, height adjustment and glides. Task stool holds up to 300 pounds. Students will be better equipped to learn.

ENGINEERING/COMPUTER SCIENCE STUDIO: \$157,000

- **Computers:** Details provided in description in *OTHER* section, below.
- **Furniture:** Work tables, chairs, cubicle offices, storage cabinets, drop down electrical chords, computer work tables, 3-D printer, individual circuit trainer, Desktop Scanning Electron Microscope
- **DISCOVERe Tablet Program:** Classroom sets of tablets for students to use as part of STEM instruction. RC faculty have collaborated with Fresno State (largest STEM transfer institution) to promote seamless education through technology. RC faculty will train with FSU faculty in their DISCOVERe training to use iPads or Surfaces for instruction. Students will use the same technology when they transfer to Fresno State.

YEAR 4: \$342,500***CHEMISTRY: 342,500***

- **Computers w/lab cart:** Allows students to process data with specialized software and perform real-time data analyses. Special software is used for certain labs and require computers to demonstrate key concepts.
- **NMR Upgrade:** Upgrading the NMR magnet from 60mhz to 90mhz will allow a hands-on NMR experience for transfer students and provide students access to equipment that they wouldn't see/use at many other community colleges. When a compound is exposed to a magnetic field, there are a number of things that can happen, but one of the most helpful/interpretable events that occurs is called coupling, which leads to the "splitting" of peaks in a spectrum. Students use these patterns of split peaks to tell them interesting things about the compounds that they've made. As it relates to the NMR



upgrade, the stronger the magnet that is used to evaluate the students' samples (90 MHz is stronger than 60 MHz), the more clearly defined the peaks are in the students' spectra. Better peak resolution makes the collected data more useful (i.e. students can get more information from their data sets).

- **Furniture FEM 4:** Details provided in description in *OTHER* section, below.
- **Computers FEM 4:** Details provided in description in *OTHER* section, below.
- **DISCOVERe Tablet Program:** Classroom sets of tablets for students to use as part of STEM instruction. RC faculty have collaborated with Fresno State (largest STEM transfer institution) to promote seamless education through technology. RC faculty will train with FSU faculty in their DISCOVERe training to use iPads or Surfaces for instruction. Students will use the same technology when they transfer to Fresno State.

YEAR 5: \$196,500

CHEMISTRY: 196,500

- **Computers w/lab cart:** Allows students to process data with specialized software and perform real-time data analyses. Special software is used for certain labs and require computers to demonstrate key concepts.
- **Furniture FEM 3:** Details provided in **Engineering and Math Classroom/Lab Renovations** description of *OTHER* section, below.
- **Computers FEM 3:** Details provided in **Engineering and Math Classroom/Lab Renovations** description of *OTHER* section, below.

<i>Equipment</i>	Item	Funds Requested				
		Year 1	Year 2	Year 3	Year 4	Year 5
	Muscle torso model	6,000				
	Cold room shelving	500				
	Refrigerator for LFS C	1,000				
	Whiteboards	2,400				



Cooling system for the LFS greenhouse	1,000					
Computers w/lab cart Biology & Chemistry	37,500	37,500	37,500	37,500	37,500	37,500
Computers (Math and English Completion First)*		15,000				
Computers (Eng/Computer Science Studio)*			16,000			
Work tables, chairs, cubicle offices, storage cabinets, drop down electrical cords, computer work tables, 3-D printer, individual circuit trainer, Desktop Scanning Electron Microscope				120,000		
Gas Chromotography	30,000					
NMR					125,000	
Dishwasher	10,000					
Automated Mel-temp	5,000					
Explosion proof fridge	8,500					
Lab Chairs	30,000	20,000		20,000		
Microscopes	32,000	32,000				
Living Streams	28,000					
Furniture FEM 3 & FEM 4					75,000	75,000
Computers FEM 3 & FEM 4					84,000	84,000
Tablet Program*			21,000	21,000	21,000	
Storage Cabinets	8,000					
		Equipment Totals	\$199,900	\$125,500	\$214,500	\$342,500

**Activities and strategies related to evidence-based practices (based on the projects Competitive Preference Priority) are noted for consideration.*

SUPPLIES

Yearly funds have been allocated for STEM supplies and materials to update, renovate, and improve activities of laboratories and classrooms. Budgeted supplies needed for the program include brochures, posters and flyers to support STEM outreach efforts. Replacing aging and worn components from equipment purchased in previous years are will assist in the improvement of several STEM programs. Acquiring small equipment is necessary to keep up with the constant changes of cutting-edge technology being developed in many STEM fields. The table below reflects the yearly allocated funds by department.

**RECURRING ANNUAL EXPENDITURES FOR YEARS ONE THROUGH FIVE**

STEM Conference: Reedley College will host an Annual Science, Technology, Engineering and Mathematics (STEM) Conference. This family-friendly conference will be the largest STEM public outreach event in Central California and will be designed to educate and inspire middle school, high school and college students in the fields of STEM in addition to exposing students to the many career opportunities in STEM. Supplies needed for this conference are pencils, backpacks, lanyards, ID badges, storage boxes, outreach material, and workshop supplies will vary depending on the type of workshops being offered.

Student Transfer Engagement Mentoring (STEM-4-STEM) Program: Program will provide guidance for minority and low income students to obtain 2 years degrees and transfer to 4-year universities by providing counseling services, workshops, field trips, and mentoring to students in STEM fields. Cohort model to include 120-150 students; Students will be required to have three appointments; 2-1/2 hour appointments and 1-1 hour appointment per semester; The development of a STEM Advisory committee which will meet once a semester to discuss current trends in industry, develop new ideas, create partnerships, develop internships, and mentorship opportunities for students in STEM majors; Workshops on a monthly basis which will include professionals from various STEM fields in industry to discuss careers; Field trips to 4-Year universities such as Cal Poly, San Luis Obispo, UC Berkeley, San Jose State, CSU, Fresno, and Cal Tech which are STEM friendly to expose students to STEM fields. (STEM will collaboratively work with other programs on campus to coordinate tours); Back pack and supplies (pencils, pens, notebooks, highlighters, erasers, folders, binders, flash drives, calendars) for each student in the cohort including TI-36 calculators for each student; Provide ceremony for graduating STEM majors with degrees to honor their accomplishments in obtaining an associate degree and combine this with a scholarship awards banquet.

Padres Como Companeros (Parents as Partners) Conference: Collaboration with existing college events, such as the Padres Como Companeros (Parents as Partners) Conference. This event will include parents, children, and students and will offer workshops, in both English and Spanish, to educate parents on college readiness and STEM careers. RC STEM students will assist during this event preparing hands-on and engaging STEM activities to children and students, while their parents are attending workshops to help them navigate higher education. Supplies needed for this event will consist in small equipment similar to maker-spaces and tinkler labs, such as cardboard, wires, duct tape, pipe cleaners, paper, wood, styrofoam, containers, corkboard, craft sticks, electronics, etc.

STEM Ambassadors: Reedley College STEM ambassadors are students majoring in STEM fields who lead activities on and off campus to encourage students to pursue STEM careers through outreach activities. A group of STEM ambassadors will be assigned as liaisons with the local high school from which they graduated. These high school alumni will provide individual and group tutorial assistance on STEM content as well as study skills development, learning strategies, organizational skills and time management. In order to perform activities such as the lifesaver car engineering challenge, straw building tower challenge, slime chemistry and marble



boat challenge, some of the supplies needed include: straws, paper clips, paper, tape, notecards, packing tape, mixing bowls, glue, buckets, borax, paper cups, and plastic wrap. The STEM Ambassadors will service over 1000 students per year.

Library: Faculty and students will be able to access current science journals and will be afforded opportunities to learn from others who are in related STEM fields. Periodicals will include but not limited to the following: American Journal of Nursing, American Scientist, Discover, E: the Environmental magazine, The Futurist, Genetics, Immunology, JAMA, Mental Floss, Men's Health, Nature, Natural History, New Scientist, Planetary Society, Popular Science, Science Illustrated, Science World, Sky & telescope, Science, Sierra, Skeptical Inquirer, Technology Review.

Biology: Supplies and instruments to integrate continual emerging technologies into courses and programs and expand course offerings. Supplies include anatomy models, slides, balances & scales, torsos, anatomical models, anatomy charts, and skeletons. These supplies will provide enriching and engaging activities with the use of electromyography which will reinforce key concepts in human biology.

Chemistry: Supplies and instruments to integrate continual emerging technologies into courses and programs. Supplies needed such as mel-temps, organic chemistry sets, hot plates, and rotary evaporators. These supplies will expand course topics such as microscale experiments in order to make the switch to a "microscale approach" to teaching organic chemistry lab techniques. Being able to make more complex molecules from less complex starting materials is one of the primary objectives of organic chemists. Another extremely important tool used by students for many of their organic chemistry experiments is a hot plate. By providing enough hot plates/aluminum block combinations we can ensure that all students may work individually for every experiment. Additional supplies include but not limited to: Alconox, buffer, bromthymol blue, chemical formula kits, cupric sulfate, flame test kit, hydron spectral pH paper dispenser, magnetic sets, and test strips in order to expand course offerings.

Computer Science: Integrate supplies into the curriculum to give students hands-on experiences and opportunities to apply what they learn in a meaningful way.

Engineering: Equipment and material needed to expand the engineering program are high resolution microscopes, digital cameras, hand tools, mobile workbenches and tool carts, soldering stations, laser cutters, circuit boards, etc. Putting in practice what is learned during classes engages students in STEM, they need to be able to make their ideas a reality, by designing and making prototypes in the studio, and then test their prototypes, learning more in this process.

Math: The Mathematics and Statistics programs at Reedley College prepare students for a variety of exciting careers. Whether a student chooses to major in Mathematics or pursue a degree in Engineering or Computer Science, math courses will play a major role



in their education. At Reedley College we offer an excellent assortment of math and statistic courses. Supplies: math manipulatives, toolkits, individual whiteboards, etc.

Math Center: The Math Center (MC) is a free tutoring resource available to all Reedley College math students. The services available in the MC are focused on increasing our students' ability to understand and enjoy mathematics. We hope to bridge the gap that keeps our students from pursuing majors and careers in math-related fields. The MC has a study area in which students can receive services or study alone. In addition to its study area, the MC contains the offices of several of our mathematics instructors. The MSC offers drop-in tutoring facilitated by RC math faculty and well-qualified student tutors. The MC has 20 computers and online access available to students with online math homework. The MC offers workshops on specific math topics throughout the semester to enhance and augment the math education offered to students. The MC offers bilingual tutoring to Spanish speaking students. Supplies needed to expand services include but not limited to individual white boards, math manipulatives, graphing charts, books, etc.

Natural Resources: Currently, the Forestry & Natural Resources Program offers one Wildlife Management class that serves as an introduction to the field of wildlife and fisheries biology. With a living stream we would be able to implement a fisheries component to the Wildlife Management and Watershed Ecology classes, provide a more in depth introduction to fisheries management techniques and help students understand the concept of carrying capacities and bioenergetics. Supplies needed include juvenile fish and fish food. Students will conduct water quality control analysis, compare sampling and analysis methods. The grant will allow the purchase of low-cost water quality monitoring kits, analyzing 8 basic water quality parameters such as coliform bacteria, temperature, turbidity, dissolved oxygen, biochemical oxygen demand (BOD), nitrate, pH, and phosphate.

Physics: Instrumentation to expand what is learned in class for acoustics and mechanical vibration, providing students with hands-on experiences on the use of instruments to conduct sound and vibration measurements, including modal impact hammers, impact force sensors, electrodynamic shakers, and accelerometers.

STEM Center: The Science, Technology, Engineering, and Mathematics (STEM) Center provides opportunities for academic development, assists students with basic college requirements and serves to motivate students towards the successful completion of their post-secondary education. In addition, the program mentors and assists students to successfully transfer to the UC and CSU into STEM majors. Supplies included but not limited to individual white boards, calculators, math manipulatives, graphing charts, STEM books, sound and vibration measurements, digital cameras, and hand tools.



Supplies	Item	Funds Requested				
		Year 1	Year 2	Year 3	Year 4	Year 5
	STEM Conference*	20,000	20,000	20,000	20,000	20,000
	STEM-4-STEM Program*	18,600	18,600	18,600	18,600	18,600
	Padres Conference*	5,000	5,000	5,000	5,000	5,000
	STEM Ambassadors*	3,000	3,000	3,000	3,000	3,000
	Biology	20,000	20,000	20,000	20,000	20,000
	Chemistry	25,000	25,000	25,000	25,000	25,000
	Computer Science	2,000	2,000	2,000	2,000	2,000
	Engineering	10,000	10,000	10,000	10,000	10,000
	Library	15,000	15,000	15,000	15,000	15,000
	Math	6,000	6,000	6,000	6,000	6,000
	Math Center	3,000	3,000	3,000	3,000	3,000
	Natural Resources	2,000	2,000	2,000	2,000	2,000
	Physics	10,000	15,000	20,000	15,000	15,000
	STEM Center*	10,000	10,000	5,000	5,000	5,000
	Supplies Totals	\$149,600	\$154,600	\$154,600	\$149,600	\$149,600

**Activities and strategies related to evidence-based practices (based on the projects Competitive Preference Priority) are noted for consideration.*

CONTRACTUAL

External Evaluator: The External Evaluator will meet with project management and staff, all related supportive bodies (committees and implementation groups), and make visits to all partner sites in the cooperative project. In addition, the evaluator will meet with Vice-Presidents and Deans at the colleges to assess their satisfaction and concerns with the cooperative effort. Visitations and reports will be completed on a cycle to allow inclusion of independent evaluation in Annual Reports submitted to the Program Office. Each October the written evaluation report covering the previous year will be submitted to the Project Director as well as the College President. The Final Summative Report will be written in October 2021.

Principal Investigator: Dr. Hernandez is responsible for conducting the research aspects of the grant program should it be funded. This will be based on the stated methodology, but may also involve the selection of a 'sample set' (which will probably be a sub-set of



the overall H.S.I. STEM program pool); conducting any testing/polling/surveys associated with data not already immediately gathered by the school or program; analysis (both qualitative and quantitative) of that data; reporting on results; and seeking publication of the research.

Contractual	Item	Funds Requested				
		Year 1	Year 2	Year 3	Year 4	Year 5
	External Evaluator	15,000	10,000	10,000	10,000	10,000
	Principal Investigator	10,000	10,000	10,000	10,000	10,000
	Contractual Totals	\$25,000	\$20,000	\$20,000	\$20,000	\$20,000

CONSTRUCTION

Construction is not included in the application budget.

OTHER

Life Science Countertop Remodel (Year 1): Replacement of the currently damaged surface for use in various life science courses.

Replace acid storage cabinet (Year 1 & 2): Purchased cabinets are especially resistant to chemical corrosion and can be locked. Additionally, cabinets may need to be secured to walls in order to be California earthquake compliant.

Redesign of chemistry/biology storeroom (Year 1): The storeroom is not big enough nor well-designed enough to accommodate all the supplies and equipment and provide adequate workspace for the preparation of chemicals and equipment for the experiments to be done. Shelving and cabinets and counter space will be redesigned and updated so that all chemicals, equipment, and supplies can be stored safely and securely and to provide counter space that can be used for sample preparation.

Engineering and Math Classroom/Lab Renovations (Year 4 & 5): Renovation of two Engineering & Math classrooms/computer labs; new computers will meet the minimum system requirements for the courses being taught in the science and math labs and will be paired with monitors sized appropriately for the space available in the lab and the visual needs of the program. The update will also require proper networking of the lab to allow for efficient use of lab time and instruction. The lab will acquire a new high definition projector to aid in visual demonstrations during class lectures. The monitors will be able to fold down into the table allowing for increased table space for additional classes where the computers will not be necessary. This will also allow for decreased student distraction during lecture and lab periods when the computers are not in use. New tables will hide wires and the classroom setup will have an isle down the middle and on the two sides for easy access to students.



- Replacement of computers, computer tables and chairs.
- Acquisition and installation of upgraded multi-media technology (high lumens data projector, large projection screen, and audio speakers for video content) and electrical/network connections relocated to allow for projection to occur at the front of the classroom and in the direction that students are facing while seated at their computer stations. Place the screen at a diagonal to prevent from covering board space in the middle
- Electrical work to install additional light switch, which will allow the fluorescent light banks to be split. Thereby allowing a portion of the lights to be turned off, while still allowing minimal lighting to let students see their keyboards while following instructional demonstrations on the labs large projection screen. Split the light connection, so you can turn off the front lights of the classroom while keeping the back lights on. This is important when you are using the projector. Replace all electrical wall plates.
- Installation of new whiteboards.
- Replace carpeting and paint walls.
- Replacement and relocation of the instructor station and add a proper sound system.
- Fees: Testing services, DSA, ADA compliance, architectural, general contractor, structural & electrical consulting, asbestos sampling, inspections.
- New power and routing access.
- Improved the ventilation system. Make sure the air-conditioner is operated from the classroom as computer labs get very hot, so it is important to have a separate air-conditioning system controlled from inside the classroom.
- Change the conduits in the concrete to prevent from tripping over cables.
- Seal the doors on the east wall between FEM3 and FEM4 as well as the door on the west wall between FEM 4 and the hallway.

Fume Hood/Overhead Ventilation (Year 1 & 3): Two fume hoods will modernize the two lab spaces and increase ventilation capacity. Add overhead/drop down ventilation to three bench-tops in physics room 77. The updated organic chemistry experimental procedures plus additional experimental work by students performing individual experiments necessitate increased ventilation in order for students to safely complete all work in a timely manner.

Install deionized water system (Year 2): This is a system for purifying water by removing ions. It needs to be installed by a plumber so that the filtration system can be connected to the sinks in the lab and stockroom with its own faucets (very similar to a water purification sometimes installed in houses, but for a lab, the water must be even more pure) so that students and instructors have a source of water free of any contaminants, which is of critical importance in a chemistry lab where whatever is in the water can react with the chemicals we use causing all sorts of contamination and error in the reactions we are trying to study. The system is normally located in the stockroom area with piping then plumbed to each end-use point.



Engineering/Computer Science Studio (Year 2 & 3): The new Engineering/Computer Science (ENGR / CSCI) studio will have computers with all the required engineering and computer science software, along with the required hardware that students may need to work on their projects. There will also be work tables for students and groups to work on hands-on projects, as well as storage for their project work. The grant will renovate current building to an ENGR/CSCI project studio for engineering and computer science students. The studio would be created adjacent to the current math center by renovating the back patio area to incorporate this new space. Two offices would be included in this space to allow for the engineering and computer science faculty to be nearby. The space will include a long row of desk space for computers and related hardware, project work tables, and storage cabinets. Students would be able to work on projects at times outside of their regular class time to allow them to experiment, design, program, and learn. This studio would be incorporated into STEM outreach events. Engineering and computer science students currently do not have a facility in which they can work on projects outside of class time. Applied projects are a motivating factor for success in engineering and computer science. They are also a great recruitment tool as they are a visual display of what our students are accomplishing. Creating an engineering and computer science studio will provide students a dedicated place to facilitate teamwork, engineering problem solving, as well as a hands-on work creative space, all in one convenient place. Equipment such as computers, 3D printers and other high technology machines will be available to students in this area to build engineering designs and prototypes, as well as programming for computer science classes.

Expand the size of the organic chemistry closet (Year 4): "Organic" chemicals means chemicals containing carbon, they present special hazards different than do other types of chemicals. It is not possible to conduct chemistry courses without using organic chemicals. Due to their particular hazards, they cannot be stored in just any place, they must be stored in cabinets or closets which meet OSHA standards. The organic closet we have currently is not large enough to safely store all the organic chemicals we need bigger projects if we plan to expand our program. We already have begun to offer a two semester sequence of "Organic Chemistry" which requires even more organic chemicals. This might require moving the ventilation hood in our current Madera storeroom or removing an existing storage cabinet to install a cabinet/closet which can be ventilated to meet OSHA standards.

<i>Other</i>	Item	Funds Requested				
		Year 1	Year 2	Year 3	Year 4	Year 5
	Life Science Countertop Remodel	10,000				
	Replacement of Acid Storage Closets	10,000				
	Replacement of Acid Storage Closets		10,000			
	Redesign Chemistry/Biology Storeroom	70,000				
	Renovations FEM 3					100,000

Other Attachment File(s)

* **Mandatory Other Attachment Filename:**

To add more "Other Attachment" attachments, please use the attachment buttons below.

Curriculum Vitae for

Dr. John Heathcote

Reedley College
Instructor of Engineering and Mathematics

(1) Professional Preparation

- B.S., Metallurgical Engineering, Purdue University, 1991
- Ph.D., Materials, University of California, Santa Barbara, 1996
- Postdoctoral Researcher: University of California, Santa Barbara, 1997 and 2000

(2) Appointments

- August 2000-Present, Instructor of Engineering and Math, Reedley College
- July 2008 – June 2011, Department Chair, Math, CSCI, and ENGR, Reedley College
- February 2000-July 2000, Postdoctoral Researcher, UC, Santa Barbara
- October 1997-December 1999, Peace Corps Volunteer, Zimbabwe
- January 1997-August 1997, Postdoctoral Researcher, UC, Santa Barbara

(3) Publications

John A. Heathcote, Xiao-Yan Gong, James Y. Yang, Upadrasta Ramamurty, Frank W. Zok, In-Plane Mechanical Properties of an All-Oxide Ceramic Composite, Journal of the American Ceramic Society, Volume 82, Issue 10, pages 2721–2730, October 1999, <http://onlinelibrary.wiley.com/doi/10.1111/j.1151-2916.1999.tb02148.x/abstract>

J. Heathcote, G. R. Odette and G. E. Lucas, A Finite Element Study on Constrained Deformation in an Intermetallic / Metallic Microlaminate Composite, 1996 MRS Spring Meeting, MRS Proceedings 1996 434 : 183 (6 pages) , Copyright © Materials Research Society 1996, DOI: <http://dx.doi.org/10.1557/PROC-434-183> , Published online by Cambridge University Press: 2011

J. Heathcote, G. R. Odette, G. E. Lucas and R. G. Rowe, Mechanical Properties of Metal-Intermetallic Microlaminate Composites, 1996 MRS Spring Meeting, MRS Proceedings 1996 434 : 101 (12 pages), Copyright © Materials Research Society 1996, DOI: <http://dx.doi.org/10.1557/PROC-434-101> , Published online by Cambridge University Press: 2011

(4) Synergistic Activities

- Developed and currently teach INTDS 100 – STEM Ambassadors, a course in which Reedley College students in Science, Technology, Engineering, and Math create and lead educational and exciting activities designed to excite younger students about careers in STEM.
- Led the development of engineering associate's degree for Reedley College.
- Developed online engineering courses in Engineering Materials and Statics.
- Collaborate with faculty from CSU, Fresno, Fresno City College, Willow International Center, and College of the Sequoias to run annual Central California Engineering Design Challenge (CCEDC)

(5) Collaborators & Other Affiliations

Collaborators for CCEDC:

- Chris Glaves, Willow International Center
- Michael Jenkins, CSU, Fresno
- Walter Loscutoff, CSU, Fresno
- Walter Mizuno, CSU, Fresno
- Larry Owens, College of the Sequoias
- Tom Yarbrough, Fresno City College

Graduate Advisors

- *G. Robert Odette, UC, Santa Barbara, Professor, Materials Department*
- *Glenn E. Lucas, UC, Santa Barbara, Executive Vice Chancellor, Professor, Materials Department*

Postdoctoral Sponsors.

- *G. Robert Odette, UC, Santa Barbara, Professor, Materials Department*
- *Frank Zok, UC, Santa Barbara, Professor, Materials Department*

CURRICULUM VITAE

Ignacio Hernández, Ph.D.

Assistant Professor ~ Higher Education, Administration, & Leadership

Department of Educational Leadership
Kremen School of Education and Human Development
California State University, Fresno
5005 N. Maple Ave. M/S ED3 Fresno, CA 93740-8025
ihernandez@csufresno.edu ~ (559) 278-0166 ~ @Nacho_PhD

Education

- Iowa State University of Science and Technology, Ames, IA** August 2013
Ph.D. in Education-Educational Leadership
Doctoral Minor in Statistics
Dissertation: Latina/o leadership: Transforming community colleges
Major Professor: Tyson E.J. Marsh
- California State University, Long Beach, Long Beach, CA** May 2009
M.S. in Counseling-Student Development in Higher Education
Graduate Certificate in Community College Leadership
- California State University, Long Beach, Long Beach, CA** May 2006
B.S. in Mathematics
- Mount San Antonio College, Walnut, CA** December 2002
A.A. in Liberal Arts

Teaching and Research Interests

Leaders and leadership in higher education
Assessment in higher education

Hispanic-serving community colleges
Educational opportunity and access

Publications

Chapters in Edited Volumes

- Hernández, I.** (2016). La comunidad es la fuerza: Community cultural wealth of Latina/o leaders in community colleges. In N. Croom & T.E.J. Marsh (Eds.). *Envisioning critical race praxis in higher education through counter-storytelling*. Charlotte, NC: Information Age Press.
- Hernandez, J.C. & **Hernández, I.** (2014). The role of the executive-level student services officer within a community college organizational structure. In C.C. Ozaki, A.M. Hornak, & C.J. Lunceford (Eds.). *New Directions for Community Colleges*, 166, (pp. 33-39). San Francisco, CA: Jossey-Bass.
- Nellum, C.J., & **Hernández, I.** (2014). The role of community college faculty in widening the STEM pipeline. In J.L. Wood & R.T. Palmer (Eds.). *STEM models of success: Programs, policies, and practices in the community college*. New York: Information Age Press.
- Rumman, C., Rivera, M., & **Hernández, I.** (2011) Student veterans and community colleges. In E. Cox & J.S. Watson (Eds.). *Marginalized Students. New Directions for Community Colleges*, 155, (pp. 51-58). San Francisco, CA: Jossey-Bass.
- Hernández, S. & **Hernández, I.** (2011). Resources for supporting marginalized students. In E. Cox

& J.S. Watson (Eds.). *Marginalized Students. New Directions for Community Colleges*, 155, (pp. 85-90). San Francisco, CA: Jossey-Bass.

Hernández, S., Hernández, I., Gadson, R., Huftalin, D., Ortiz, A.M., Calleroz White, M., & Yocum-Gaffney, D., (2010). Sharing their secrets: Undocumented students' personal stories of fear, drive, and survival. In J. Price (Ed.). *Understanding and Supporting Undocumented Students. New Directions for Student Services*, 131, (pp. 67-84). San Francisco, CA: Jossey-Bass.

Technical Reports and Monographs

Hernández, I., & Ogilvie, C.A. (2013). Iowa State University post-doctoral research activity report for calendar year 2012. *Iowa State University Graduate College Reports: Paper 7*. Ames, IA. Available from http://lib.dr.iastate.edu/grad_reports/7

Ogilvie, C.A., & Hernández, I. (2013). Iowa State University graduate student activity report for calendar year 2012. *Iowa State University Graduate College Reports: Paper 6*. Ames, IA. Available from http://lib.dr.iastate.edu/grad_reports/6

Ogilvie, C.A., & Hernández, I. (2013). Graduate student learning communities at Iowa State University. *Iowa State University Graduate College Reports: Paper 2*. Ames, IA. Available from http://lib.dr.iastate.edu/grad_reports/2

Ogilvie, C.A., & Hernández, I., Mosley, L. (2012). Iowa State University graduate student activity report for calendar year 2011. *Iowa State University Graduate College Reports: Paper 11*. Ames, IA. Available from http://lib.dr.iastate.edu/grad_reports/11

Hernández, I., & Ogilvie, C.A. (2012). Early engagement of first-year graduate students at Iowa State University. *Iowa State University Graduate College Reports: Paper 4*. Ames, IA. Available from http://lib.dr.iastate.edu/grad_reports/4

Manuscripts in Preparation

Hernández, S., Hernández, I., Alamillo, L., & Miguel, J. (In preparation). Latina student mothers in higher education. Targeted submission to *Journal about Women in Higher Education*

Hernández, I., Hernández, S., Medina, M., & Yang, M.K. (In preparation). Hispanic-Serving Institutions and organizational culture: Community colleges in the Central Valley. Targeted submission to *Community College Journal of Research and Practice*.

Hernández, I., & Ramirez, R. (In preparation). Latina/o leadership capital: A community cultural wealth perspective on community college leadership. Targeted submission to *Community College Review*.

Teaching Responsibilities

California State University, Fresno

ERA 153—*Educational Statistics* (Fall 2014, Fall 2013)

EAD 261—*Introduction to Educational Leadership* (Fall 2015, Fall 2014, Fall 2013)

EAD 266—*Seminar in Higher Education Finance* (Fall 2015)

EAD 269—*Professional Seminar for Higher Education Leadership* (Spring 2016, Spring 2014, Spring 2013)

EAD 280T—*Information and Analysis: Assessment in Higher Education* (Fall 2015)

Iowa State University

ResEv 552—Basic Educational Statistics (Fall 2010)

ResEv 553—Intermediate Educational Statistics (Spring 2010)

ResEv 554—Intermediate Research Methods (Fall 2012)

California State University, Long Beach

UNIV 100—The University and Your Future (Spring 2008)

Service Commitments

Institutional

California State University, Fresno

University-level service

- Assessment Faculty Learning Community (Spring 2015)
- Provost's Learning Assessment Team (Spring 2015-Present)
- WASC Core Competencies Sub-committee (Spring 2015)
- Smittcamp Family Honors College Application Reading Team (Spring 2015)
- All-university Leadership Awards Selection Committee (Spring 2015)
- Search Committee Faculty Representative, *Assistant Director for Student Life* (Spring 2014)
- University Student Union Board of Directors (Fall 2013-present)

College-level service

- KSOEHD Assessment Coordinator (2015-present)
- KSOEHD Graduate Committee (Spring 2014-present)
- KSOEHD *Ad Hoc* Outreach Committee (Spring 2015-present)
- KSOEHD Budget Committee (Fall 2013-present)

Department-level service

- Department of Educational Leadership *Ad Hoc* IRB Committee (Fall 2015-present)
- Department of Educational Leadership *Ad Hoc* Graduate Writing Committee (Spring 2015-present)

Iowa State University

- School of Education Technology Committee (2011-2012)
- Graduate College Minority Assistantship Program Research Symposium Planning Committee (2012)
- College of Human Sciences Computational Advisory Committee (2011)
- Treasurer, Latina/o Graduate Student Association (2011-2013)

National

Association for the Study of Higher Education

- Member (2009-Present)
- Member: Conference Planning Committee (2016)

Council for the Study of Community Colleges

- Member (2010-present)
- Mentor for first-time conference attendees (2013)

National Community College Hispanic Council

- Member (2010-present)

- Board of Directors (2012-Present)

NASPA-Student Affairs Administrators in Higher Education

- Faculty mentor for Latina/o Scholar Office Hours (2014-present)
- Planning committee for the Western Regional Conference Research and Policy Institute (2014)
- Community Colleges Division—Faculty in Residence on Board of Directors (2015-Present)

Editorial Responsibilities

Journal of Applied Research in the Community College

- Manuscript Reviewer (2014-present)

Community College Review

- Manuscript Reviewer (2014-present)

Journal of Diversity in Higher Education

- Manuscript Reviewer (2014-present)

NASPA-Student Affairs Administrators in Higher Education

- National Conference Proposal Reviewer (2011-present)
- Western Regional Conference Proposal Reviewer (2014-present)

Association for the Study of Higher Education

- Conference Proposal Reviewer (2011-present)

Council for the Study of Community Colleges

- Conference Proposal Reviewer, (2011-present)

Higher Education Professional Work Experience

Assistant Professor (2013-Present)

California State University, Fresno
Department of Educational Leadership

Primary Duties

- Teach courses in the Higher Education Administration and Leadership master's degree pathway
- Contribute to the growth and development of the Higher Education Administration and Leadership master's degree pathway
- Graduate student advising

Assessment Coordinator (2015-Present)

California State University, Fresno
Kremen School of Education and Human Development

Primary Duties

- Document assessment activities for program improvement
- Collaborate with colleagues to support robust assessment reporting
- Communicate findings with faculty

Higher Education, Administration, and Leadership Graduate Degree Pathway Facilitator (2013-2015)

California State University, Fresno
Department of Educational Leadership

Primary Duties

- Lead the development of the Higher Education Administration and Leadership master's degree pathway
- Liaison with the Division of Graduate Studies and KSOEHD graduate program coordinator

- Graduate student recruitment and advising

Program Coordinator (2007-2009)

California State University, Long Beach
Jensen Student Access to Science (SAS) and Mathematics Center

Primary Duties:

- Academic Advising
- Coordinated National Science Foundation *Robert Noyce Scholarship Program*
- Coordinated National Institutes of Health *Bridges to the Baccalaureate Program*
- Coordinated National Institutes of Health *Minority Access to Research Careers*

Practicum Assistant (Spring 2007)

California State University, Long Beach
Summer Bridge Program

Primary Duties:

- Developed interview protocol for resident assistant interviews
- Served on interview committee and assist in hiring decisions
- Planned, organized, and executed developmental training session for resident assistants

Program Assistant (2006-2007), College Advisor Aide (2004-2006)

California State University, Long Beach
Educational Talent Search (Federal TRiO Program)

Primary Duties:

- Post-secondary advisement and application assistance
- Financial aid advisement and application assistance
- Planned and executed large group and parent workshops in English and Spanish

Senior Residential Advisor (Summer 2006), Residential Advisor (Summer 2005)

California State University, Long Beach
Summer Bridge Program

Primary Duties:

- Prepared and organized staff training manual including oversight of weeklong training
- Supervised a staff of seven Residential Advisors
- First-year of college adjustment counseling and advisement

Graduate School Research and Teaching

Graduate Assistant (Spring 2012-Summer 2013)

Iowa State University
The Graduate College

Primary Duties:

- Contributed to institutional awareness and improvement of graduate student retention efforts
- Administered surveys, collected data, and analyzed results on graduate student data
- Authored technical reports to support research-based campus-wide policy initiatives

Graduate Research Assistant (Fall 2009-Spring 2012)

Iowa State University
Office of Community College Research and Policy

Primary Duties:

- Assisted faculty members on research projects
- Developed and presented research on community college transfer students
- Developed and presented research on community college leadership

Graduate Student Intern (Spring 2009)

Santiago Canyon Community College
Office of the Vice President of Student Services

Primary Duties:

- Gained awareness of a student services program review process
- Developed a rubric to be utilized in assessing each student service unit's program review process
- Assessed each unit's 2007-08 student learning outcome report using the created rubric

Presentations

Refereed Papers and Panels

Alamillo, L., Hernández, S., **Hernández, I.**, & Miguel, J. (2015, December). *Literacy, language, and equity: Perspectives on preparing for and attending college*. Presentation at the Literacy Research Association Annual Conference, Carlsbad, CA.

Scogin, B., **Hernández, I.**, Hernández, S., & Karkazian, T. (2015, November). Fresno State Talks: Amplifying faculty and student voice. Presentation at the NASPA Western Regional Conference, Oakland, CA.

Hernández, I., & Hernández, S. (2015, April). *Hispanic serving community colleges: An exploration of Latina/o student success and student affairs practice*. Presentation at the Council for the Study of Community Colleges Annual Conference, Fort Worth, TX.

Hernández, I., Hernández, S. Medina, M., & Yang, M.K., (2015, March). *Hispanic serving community colleges: An exploration of student affairs practice in California's Central Valley*. Presentation at the NASPA-Student Affairs Administrators in Higher Education Annual Conference, New Orleans, LA.

Hernández, I. & Ramirez, R., (2014, September). *An integrated model of Latina/o leadership capital*. Presentation at the National Community College Hispanic Council Leadership Symposium, Scottsdale, AZ.

Hernández, I. (2014, June). *Latina/o student experiences in the United States*. International presentation at the Simposio Mejorando la Calidad de Educación Superior: Temas y Servicios Estudiantiles, Universidad de San Francisco, Quito, Ecuador.

De Jesus, L., Duran, R., **Hernández, I.**, Muñoz, M.R., & Leyba-Ruiz, T. (2014, April). *The National Community College Hispanic Council Leadership Fellows Program: Preparing the next generation of Latina/o leaders*. Presentation at the American Association of Community Colleges Annual Conference, Washington, DC.

Espino, M.M., Guardia, J.R., **Hernández, I.**, & Perez, J. (2014, March). *Transforming the higher education landscape: A focus on supporting Latina/o students, administrators, and faculty*. Presentation at the NASPA-Student Affairs Administrators in Higher Education Annual Conference, Baltimore, MD.

Hernández, I., (2013, September). *Latina/o leadership: Transforming community colleges*. Presentation at the National Community College Hispanic Council Leadership Symposium, Chicago, IL.

Hernández, I., (2012, September). *The National Community College Hispanic Council Leadership Fellows Program: A critical race theory Perspective*. Presentation at the National Community College Hispanic Council Leadership Symposium, Long Beach, CA.

Cervantes, C., **Hernández, I.**, Vega, W., & Vela, R. (2012, April). *Reflexiones: Reflections of Latina/o leaders and the National Community College Hispanic Council Leadership Fellows Program*. Presentation at the American Association of Community Colleges Annual Conference, Orlando, FL.

Hernández, I., (2012, April). *The National Community College Hispanic Council Leadership Fellows Program: A critical race theory perspective*. Presentation at the Council for the Study of Community Colleges Annual Conference, Orlando, FL.

Kamimura, M., Kamimura, A., Hernández, S., & **Hernández, I.** (2012, March). *Dual career couples in higher education: The Latino reality*. Presentation at the American Association of Hispanics in Higher Education Annual Conference, Costa Mesa, CA.

Hernández, I. & Laanan, F.S., (2011, November). *Transfer student capital: Agency, knowledge, and action along the community college pathway*. Presentation at the Association for the Study of Higher Education Annual Conference, Charlotte, NC.

Hernández, I., (2011, October). *Comparative study of STEM and non-STEM transfer students: Characteristics, experiences, and implications*. Presentation at the National Community College Hispanic Council Leadership Symposium, San Antonio, TX.

Laanan, F.S. & **Hernández, I.**, (2011, April). *Comparative study of STEM and non-STEM transfer students: Characteristics, experiences, and implications*. Presentation at the Council for the Study of Community Colleges Annual Conference, New Orleans, LA.

Vasquez, P.L., **Hernández, I.**, Hernández, S., Cabrales, J.A., Ranero, J.J. & Rendón, L.I. (2010, March). *Creating a critical mass of Latinas/os in graduate education: A model for success*. Presentation at the American Association of Hispanics in Higher Education Annual Conference, Costa Mesa, CA.

Symposia, Posters, and Roundtables

Hernández, S., **Hernández, I.**, Alamillo, L., & Miguel, J. (2015, November). *The funds of knowledge of Latina student mothers*. Roundtable at the Association for the Study of Higher Education Annual Conference, Denver, CO.

Hernández, I., (2015, April). *Faculty presenter*. Panelist at the California State University, Fresno Student Success Summit, Fresno, CA.

Allen, T.O, Hernández, S., Gonzáles, A., & **Hernández, I.**, (2015, March). *From AAHHE fellows to the faculty*. Symposium at the American Association of Hispanics in Higher Education Annual Conference, Frisco, TX.

McCallum, C., Griffin, K., Hernández, S., Castillo-Montoya, M., Negrón-González, G., Linder, C. & **Hernández, I.**, (2014, November). *Finding and embracing our place in the academy: A cohort approach through tenure*. Roundtable at the Association for the Study of Higher Education Annual Conference, Washington, DC.

Acevedo-Gil, N., Santos, R.E., Soltero-Lopez, A.K., Islas, L., **Hernández, I.**, Solórzano, D.G., & Jain, D. (2013, November). *Latinas/os in the community College system: Addressing obstacles in the transfer pipeline*. Symposium at the Association for the Study of Higher Education Annual Conference, Saint Louis, MO.

Hernández, I., (2010, April). *Lost in translation: Unique characteristics of Latina/o presidents of community colleges*. Poster Presentation at the Council for the Study of Community Colleges Annual Conference, Seattle, WA.

Hernández, I., Rivera, M., & Ebbers, L.H. (2010, April) *From imaginary to real numbers: Community college STEM Faculty*. Roundtable Presentation at the Council for the Study of Community Colleges Annual Conference, Seattle, WA.

Invited Talks

Hernández, I., (2015, July). *EOP Summer Bridge Program Saturday Conference*. Keynote Speaker for the Fresno State EOP Summer Bridge Program, Fresno, CA.

Hernández, I., (2015, June). *End-of-the-year awards night*. Keynote Speaker for the Long Beach City College Student Support Services Program, Long Beach, CA.

Hernández, I., (2015, March). *15th Annual Classified Professionals Mega Conference*. Invited Panelist for the State Center Community College District Classified Professionals Committee, Fresno, CA.

Hernández, I., (2015, January). *Latina/o students at Fresno State: Implications for student affairs practice*. Presentation to the Fresno State Division of Student Affairs Professional Development Conference, Fresno, CA.

Hernández, I., (2014, November). *Pursuing a career in academia*. Presentation to the Association for the Study of Higher Education Council on Ethnic Participation Pre-Conference, Washington, DC.

Hernández, I., (2014, September). *Diversity for 21st century leadership*. Presentation to the National Community College Hispanic Council Leadership Fellows Program, Scottsdale, AZ.

Hernández, I., & Hernández, S. (2014, May). *TRiO programs awards night*. Keynote Speaker to the College of the Sequoias TRiO Educational Opportunity Programs, Visalia, CA.

Hernández, I., (2013, September). *AACC's 21st century commission report discussion*. Moderator at the National Community College Hispanic Council Leadership Symposium, Chicago, IL.

Hernández, I., (2010, September). *NCCHC Leadership Fellows reflection*. Invited Panelist at the National Community College Hispanic Council Leadership Symposium, Miami, FL.

Hernández, I., & Simon, M. (2007, October). *Selecting a student affairs graduate education program*. Presentation at the NASPA Western Regional Careers in Student Affairs Day, Los Angeles, CA.

Hernández, I., (September-December, 2006). *Financial aid information night for parents (in Spanish)*. Presentations at Banning High School, Wilmington, CA; Carson High School, Carson, CA; Lakewood High School, Lakewood, CA; Polytechnic High School, Long Beach, CA.

Awards, Grants, and Fellowships

Student Nominated Recognition

Hernández, I. (2015, May). *Outstanding Advisor Award--Nominated*, Campus Advisors Network, California State University, Fresno

Hernández, I., & Hernández, S. (2015, February). *Degrees of connection: Familia, educación, and success*. Fresno State Talks student selected lecture series, Fresno, CA.

Funded Proposals

Assessment Leadership Academy Fellowship with WASC Senior College and University Commission, June 2015-January 2016

ELEVATE Fellowship with the University of Pennsylvania's Center for Minority Serving Institutions, June 2015

KSOEHD Dandoy Committee/Provost's Research Award KSOEHD California State University, Fresno, Funded research support for \$3,000, Summer 2015

Assessment Grant Office of Institutional Effectiveness, California State University Fresno, Funded \$3000 to improve assessment of the Graduate Writing Requirement, 2015-2016

KSOEHD Dandoy Committee/Provost's Research Award KSOEHD California State University, Fresno, Funded research support for 3 WTU's assigned time and \$1000 for a graduate research assistant, Spring 2015

Graduate Student Recruitment Grant Division of Graduate Studies, California State University Fresno, Funded \$1000 for graduate program development, 2015-2016

KSOEHD Dandoy Committee/Provost's Research Award KSOEHD California State University, Fresno, Funded research support for 3 WTU's assigned time and \$2000 for a graduate research assistant, Fall 2014

Graduate Student Recruitment Grant Division of Graduate Studies, California State University Fresno, Funded \$800 for graduate program development, 2013-2014

Hispanic Association of Colleges and Universities (HACU) Hispanic Higher Education Research Collective (H3ERC) Research Grant Award for \$6,000, 2012

Association for Institutional Research (AIR) National Data Institute Fellowship, 2012

American Association of Hispanics in Higher Education (AAHHE) Graduate Student Fellows Program, 2011

Association for the Study of Higher Education (ASHE) Graduate Student Policy Seminar on Minority Serving Institutions, 2011

National Community College Hispanic Council (NCCHC) Leadership Fellows Program, 2010

Pending Proposals

From Minority Serving Institutions, For Minority Serving Institutions (FM²) (co-PI with Dr. Marybeth Gasman, Dr. Susana Hernández, Dr. Glenda Prime, Dr. Kizuwanda Grant, & Dr. Tim Fong) U.S. Department of Education: Institute of Education Sciences (IES) Research Training Programs in the Education Sciences, CFDA Number 84.305B, Pending Funding Request for \$1,200,000.

Unfunded Proposals

NASPA Foundation Channing Briggs Small Grant Submission (co-PI with Dr. Susana Hernández) Hispanic Serving Community Colleges: An Exploration of Student Affairs Professionals in the Central Valley, Funding request: \$6,100

NASPA Region VI Grant Submission (co-PI with Dr. Susana Hernández, Millie Medina, and May Yang) Minority Serving Institutions: An Exploration of Student Affairs Practice in California's Central Valley, Funding request: \$6,500

Instructional Related Activities Grant California State University, Fresno Associated Students, Inc. (ASI), 2014, Funding request: \$7,500

Research Design Workshop for Faculty at Minority Serving Institutions Northwestern University (Evanston, IL), 2014

Professional Affiliations and Organizations

AACC: American Association of Community Colleges (2010-present)

AAHHE: American Association of Hispanics in Higher Education (2010-present)

AALHE: Association for the Assessment of Learning in Higher Education (2015-present)

AERA: American Educational Research Association (2013-present)

- Division J: Postsecondary Education
- SIG Critical Examination of Race, Ethnicity, Class, and Gender in Education
- SIG Educational Statisticians
- SIG Leadership for Social Justice
- SIG Survey Research in Education

AIR: Association for Institutional Research (2012-present)

ASHE: Association for the Study of Higher Education (2008-present)

- Council on Ethnic Participation

Center for Minority Serving Institutions at the Penn Graduate School of Education (2014-present)

- Faculty Affiliate

CSCC: Council for the Study of Community Colleges (2010-present)

NASPA: National Association of Student Personnel Administrators (2007-present)

- Board of Directors (Community College Division)
- Latina/o Knowledge Community

NCCHC: National Community College Hispanic Council (2010-present)

- Board of Directors

NILOA: National Institute for Learning Outcomes Assessment (2015-present)

References

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May 27, 2016

Grant Application Reviewers,

Fresno State is excited to collaborate with Reedley College on the HSI STEM (STEM-4-STEM) grant application. We stand ready to assist in faculty professional development for instructors who seek to incorporate tablet pedagogy and materials into STEM courses.

Fresno State is committed to faculty professional development opportunities across the STEM disciplines. Our team provides training and support for tablet based pedagogy in higher education and includes faculty learning communities and an intensive summer institute. The support team includes instructional designers, technical support, multimedia creation, and faculty experts. Customized training is available for course redesign efforts to support faculty in developing the necessary expertise to teach effectively leveraging technology within their disciplines. Faculty training includes but is not limited to:

- Discussing the pedagogical implications of tablets in higher education.
- Becoming proficient with the iPad Air or Surface Pro and the core apps.
- Exploring core apps for in-class use.
- Use tablets in an actual classroom environment.
- Develop expertise using the apps faculty will actual use in the classroom.
- Ongoing support during the course redesign process using best practices to ensure quality assurance.

Fresno State has a long history of collaborating with Reedley College in efforts to improve teaching and learning. Together we are committed to student success and look forward to continuing this history of collaboration with this important and timely STEM professional development initiative.

Sincerely,



James E. Marshall, Dean
Division of Graduate Studies



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Confirmation

Thank you for submitting your grant application package via Grants.gov. Your application is currently being processed by the Grants.gov system. Once your submission has been processed, Grants.gov will send email messages to advise you of the progress of your application through the system. Over the next 24 to 48 hours, you should receive two emails. The first will confirm receipt of your application by the Grants.gov system, and the second will indicate that the application has either been successfully validated by the system prior to transmission to the grantor agency or has been rejected due to errors.

Please do not hit the back button on your browser.

If your application is successfully validated and subsequently retrieved by the grantor agency from the Grants.gov system, you will receive an additional email. This email may be delivered several days or weeks from the date of submission, depending on when the grantor agency retrieves it.

You may also monitor the processing status of your submission within the Grants.gov system by clicking on the "Track My Application" link listed at the end of this form.

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IMPORTANT NOTICE: If you do not receive a receipt confirmation and either a validation confirmation or a rejection email message within 48 hours, please contact us. The Grants.gov Contact Center can be reached by email at support@grants.gov, or by telephone at 1-800-518-4726. Always include your Grants.gov tracking number in all correspondence. The tracking numbers issued by Grants.gov look like GRANTXXXXXXXXX.

If you have questions please contact the Grants.gov Contact Center: support@grants.gov
1-800-518-4726 24 hours a day, 7 days a week. Closed on federal holidays.

The following application tracking information was generated by the system:

Grants.gov Tracking Number: GRANT12175741

Applicant DUNS: 07-187-4416

Submitter's Name: Edwin Eng

CFDA Number: 84.031

CFDA Description: Higher Education_Institutional Aid

Funding Opportunity Number: ED-GRANTS-030416-002

Funding Opportunity Description: Office of Postsecondary Education (OPE): : Hispanic-Serving Institutions STEM and Articulation Program CFDA Number 84.031C

Agency Name: U.S. Department of Education

Application Name of this Submission: Reedley College H.S.I. STEM FY 2016

Date/Time of Receipt: May 31, 2016 01:59:45 PM EDT

TRACK MY APPLICATION – To check the status of this application, please click the link below:

http://www.grants.gov/web/grants/applicants/track-my-application.html?tracking_num=GRANT12175741

It is suggested you Save and/or Print this response for your records.

Cherylyn Crill-Hornsby

From: DoNotReply@grants.gov
Sent: Tuesday, May 31, 2016 11:00 AM
To: Grants Sub
Subject: GRANT12175741 Grants.gov Submission Receipt

Your application has been received by Grants.gov, and is currently being validated.
Your submission was received at May 31, 2016 01:59:45 PM EDT

Validation may take up to 2 business days. To check the status of your application please click here
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Type: GRANT

Grants.gov Tracking Number: GRANT12175741

We will notify you via email when your application has been validated by Grants.gov and is being prepared for Grantor agency retrieval.

DUNS Number: 0718744160000

AOR name: Edwin Eng

Application Name: Reedley College H.S.I. STEM FY 2016

Opportunity Number: ED-GRANTS-030416-002

Opportunity Name: Office of Postsecondary Education (OPE): : Hispanic-Serving Institutions STEM and Articulation Program CFDA Number 84.031C

<https://apply07.grants.gov/apply/login.faces?cleanSession=1&userType=applicant>

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Subject: GRANT12175741 Grants.gov Submission Validation Receipt for Application

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