Grant Progress Report

1. TITLE OF PROJECT
High Plains Intermountain Center for Agricultural Health and Safety (HICAHS)

2a. PROGRAM DIRECTOR / PRINCIPAL INVESTIGATOR
(Name and address, street, city, state, zip code)
Dr. Stephen J. Reynolds
Colorado State University
Environmental & Radiological Health Sciences
1681 Campus Delivery
Fort Collins, CO 80523-1681

2b. E-MAIL ADDRESS
stephen.reynolds@colostate.edu

2c. DEPARTMENT, SERVICE, LABORATORY, OR EQUIVALENT
Environmental & Radiological Health Sciences

2d. MAJOR SUBDIVISION
College of Veterinary Medicine & Biomedical Sciences

2e. Tel: 970-491-3141 Fax: 970-491-2940

3a. APPLICANT ORGANIZATION
(Name and address, street, city, state, zip code)
Colorado State University
2002 Sponsored Programs
601 S. Howes Street
Fort Collins, CO 80523-2002

3b. Tel: 970-491-0974 Fax: 970-491-6147

3c. DUNS: 78-597-9618

4. ENTITY IDENTIFICATION NUMBER
1-846000545-A1

5. NAME, TITLE AND ADDRESS OF ADMINISTRATIVE OFFICIAL
Linda Monum, Senior Research Administrator
Colorado State University
601 S. Howes Street, Fort Collins, CO 80523-2002
Tel: 970-491-0974 Fax: 970-491-6147
E-MAIL: linda.monum@colostate.edu

6. HUMAN SUBJECTS
☐ No ☒ Yes
If Yes, "Yes," IACUC approval Date:

7. VERTEBRATE ANIMALS
☒ No ☐ Yes
If Yes, "Yes," IACUC approval Date:

7a. If "Yes," IACUC approval Date:
7b. Animal Welfare Assurance No. A3572-01

8. COSTS REQUESTED FOR NEXT BUDGET PERIOD
8a. DIRECT $1,130,024 8b. TOTAL $1,499,328

9. INVENTIONS AND PATENTS
☒ No ☐ Yes
If "Yes," Previously Reported
Not Previously Reported

10. PROJECT/PERFORMANCE SITE(S)
Organizational Name: Colorado State University
DUNS: 78-597-9618

11. NAME AND TITLE OF OFFICIAL SIGNING FOR APPLICANT ORGANIZATION (Item 13)
Tracey Castaneda, Research Administrator
TEL: 970-491-1560 FAX: 970-491-6174 E-MAIL: tracey.castaneda@colostate.edu

12. Corrections to Page 1 Face Page

13. APPLICANT ORGANIZATION CERTIFICATION AND ACCEPTANCE: I certify that the statements herein are true, complete and accurate to the best of my knowledge, and accept the obligation to comply with Public Health Services terms and conditions if a grant is awarded as a result of this application. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties.

SIGNATURE OF OFFICIAL NAMED IN ITEM 11
DATE 5/8/12

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**HIGH PLAINS CENTER FOR AGRICULTURAL HEALTH AND SAFETY**

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<td>EP1 - Safety Training</td>
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<td>(Continuation next page)</td>
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**SUBTOTALS**

| CONSULTANT COSTS | RP1 - Bioaerosol - $5,000; Evaluation - $10,400 | 15,400 |

**EQUIPMENT (Itemize)**

**SUPPLIES (Itemize by category)**

Admin/Planning Core - $1,000; PP3 - Ayers - $2,000; RP1 - Bioaerosol - $27,507; EP2 - Translation - $250; EP1 - Safety Training - $1,400;

**TRAVEL**

Admin/Planning Core - $8,000; Outreach - $8,826; RP1 - Bioaerosol - $576; PP3 - Ayers - $3,500; PP2 - Exposure - $6,000; EP1 - Safety Training - $9,889; EP2 - Translation - $7,800; Evaluation - $6,690

**INPATIENT CARE COSTS**

**OUTPATIENT CARE COSTS**

**ALTERATIONS AND RENOVATIONS (Itemize by category)**

**OTHER EXPENSES (Itemize by category)**

Admin Core - $1,800; Pilot/Feas. Proj./EI - $55,787; Outreach - $3,500; RP1 - Bioaerosol - $6,100; EP2 - Translation - $34,700; EP1 - Safety Training - $10,000; Evaluation - $500; PP3 - Ayers - $5,280

**SUBTOTAL DIRECT COSTS FOR NEXT BUDGET PERIOD**

$ 960,116

**CONSORTIUM/CONTRACTUAL COSTS**

RP1 - Bioaerosol - $20,000; PP2 - Exposure - $87,472; EP1 - Safety Training - $6,000

**DIRECT COSTS**

113,472

**FACILITIES AND ADMINISTRATIVE COSTS**

56,436

**TOTAL DIRECT COSTS FOR NEXT BUDGET PERIOD (Item 8a, Face Page)**

$ 1,130,024
### Detailed Budget for Next Budget Period - Direct Costs Only

**Program Director/Principal Investigator (Last, First, Middle):** Reynolds, Stephen J.  
**Overall - Reynolds - CSU**

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**Subtotals**

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**Equipment (Itemize)**

**Supplies (Itemize by category)**

**Travel**

**Inpatient Care Costs**

**Outpatient Care Costs**

**Alterations and Renovations (Itemize by category)**

**Other Expenses (Itemize by category)**

**Subtotal Direct Costs for Next Budget Period**

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**Total Direct Costs for Next Budget Period (Item 8a, Face Page)**

| $ |

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BUDGET JUSTIFICATION

Provide a detailed budget justification for those line items and amounts that represent a significant change from that previously recommended. Use continuation pages if necessary.

(Please see justification for each core/project on the individual budget justifications.)

CURRENT BUDGET PERIOD

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Explain any estimated unobligated balance (including prior year carryover) that is greater than 25% of the current year's total budget.
### Detailed Budget for Next Budget Period - Direct Costs Only

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#### Equipment (Itemize)

#### Supplies (Itemize by Category)

Computer storage/accessories, printing cartridges, miscellaneous supplies

#### Travel

Travel to Centers Directors, EAB, & DAB meetings; Travel to International Dairy Research Consortium for PI

#### Inpatient Care Costs

#### Outpatient Care Costs

#### Alterations and Renovations (Itemize by Category)

#### Other Expenses (Itemize by Category)

Long Distance telephone/conference calling services - $1,000; Hosted Hospitality meetings/working lunches - $800

#### Subtotal Direct Costs for Next Budget Period

| **$134,298** |

#### Total Direct Costs for Next Budget Period (Item 8a, Face Page)

| **$134,298** |
Provide a detailed budget justification for those line items and amounts that represent a significant change from that previously recommended. Use continuation pages if necessary.

**Personnel ($123,498)**
Reynolds, Stephen, Ph.D., CIH, Center Director, Colorado State University, 1.35 academic person-months, 0.45 summer person-months (15%) effort in Year 02. Dr. Reynolds is a Professor and Head of the Occupational and Environmental Health Section in the Department of Environmental and Radiological Health Sciences at Colorado State University. He is recognized as an international leader in the application of industrial hygiene to agriculture, particularly for his work on endotoxins and respiratory disease (more than 90 peer reviewed publications). He is also recognized for his leadership in agricultural health and more broadly in occupational health on a national and international level. He has extensive experience leading multidisciplinary, multi-institutional collaborations and is eminently qualified to serve as Director of HICAHS. He has been Director of HICAHS since May 1, 2002, and was previously Deputy Director of the Great Plains Center for Agricultural Health (GPCAH) 1995-97, and Director 1997-2001. He is also the founding Deputy Director of the new Mountain and Plains ERC (established 2007), a partnership between Colorado State University and the University of Colorado within the Colorado School of Public Health. In 2011 - 2016, Dr. Reynolds, will be responsible for the overall leadership, administration, and management of the HICAHS Center. He will chair the Internal Advisory Committee; prepare reports and renewals; represent the Center to the administration, academic departments, and other research and outreach units at CSU; represent the Center to NIOSH and other federal and state agencies; represent the Center at meetings of the NIOSH Ag Center Directors (Coordinating Committee); and interface with the public and private sector. He will (continued)

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Explain any estimated unobligated balance (including prior year carryover) that is greater than 25% of the current year's total budget: N/A
supervise all Center functions, and has overall responsibility for development of strategic planning, and evaluation. He will be assisted in financial management by Kathy Petersen, and in administrative duties by Allison DeVries, HICAHS Center Coordinator. He will devote significant effort to developing and managing partnerships, especially through the Pilot/Feasibility Grant program, focused Conferences/Workshops, and Outreach. He will continue to provide leadership to the dairy initiatives forming the foundation of this application. Dr. Reynolds is also participating directly in three of the proposed projects, and collaborating on research proposed at two NIOSH Ag Centers. He will devote 20% effort. 15% salary support is being requested with the remaining 5% support being provided by the Department of Environmental & Radiological Health Sciences.

Stallones, Lorann, PhD., Deputy Director, 1.80 calendar months (15% effort) in Year 02. Dr. Stallones is a Professor in the Department of Psychology, and is Director of the MPH Graduate Program, the CSU component of the Colorado School of Public Health. She was the founding Director of the Colorado Injury Control Research (CICRC) and has served in that capacity since 1995. Dr. Stallones will serve as Deputy Director of HICAHS and as Director of the Outreach activities of HICAHS. She has more than 28 years of experience conducting research on agricultural safety and health. Dr. Stallones’ strengths are an excellent complement to Dr. Reynolds, and she will assist him with all phases of Center administration. Drs. Reynolds and Stallones will meet on a weekly basis. In particular, she will use her many years of experience to assist in enhancing the Outreach activities of HICAHS, serving as the Director of the HICAHS Outreach program (please see budget justification for Outreach program).

Goodridge, Lawrence, Ph.D., Co-Investigator, 0.18 academic person-months, 0.06 summer person-months (2.0% effort) in Year 02. Dr. Goodridge is an Associate Professor in the Department of Animal Sciences, College of Agriculture and is a key member of the Center for Meat Safety and Quality. His primary research focus encompasses the development of biosensors for rapid detection of foodborne and waterborne bacterial and viral pathogens. Secondary research interests include characterization of the genetic determinants of antibiotic resistance in bacteria isolated from food production animals. Other research interests include developing novel biocontrol methods to reduce the foodborne pathogen load of livestock, and development of non-thermal food processing methods for minimally processed foods. His research is currently funded by the Colorado State University Infectious Disease Super Cluster, Colorado Water Resources Research Institute, National Groundwater Research and Educational Foundation, the Hewlett Packard Corporation, United States Department of Agriculture CSREES and the National Oceanic and Atmospheric Association, in addition to HICAHS. He has two patents.

Dr. Goodridge will work closely with Dr. Reynolds and the other Core Directors and investigators to coordinate research efforts and facilitate integration of research findings into translation and outreach activities. He is also a Co-Investigator on two HICAHS research projects.

Lamm, Dennis, Ph.D., Co-Investigator, 0.18 academic person-months, 0.06 summer person-months (2.0% effort) in Year 02. Dr. Lamm is a Professor, College of Agricultural Sciences, at Colorado State University. Dr. Lamm was raised on a crops/livestock farm in SE Pennsylvania and received his BS and MS degrees in animal science from Delaware Valley College and Iowa State University, respectively. From 1986-1997 he was assistant director of agriculture and natural resource programs for CSU Cooperative Extension. In 1994, Lamm was named the state Extension coordinator for Sustainable Agriculture. Since 1997 he has been Professor of Animal Sciences (Extension Livestock Systems Specialist) and is the new director of the Master of Agriculture – Agricultural Extension Education program. Dr. Lamm brings a direct connection to Cooperative Extension and important connections to many agricultural producers in the region. He has served an important role to help direct and coordinate HICAHS Outreach in 2007 to 2011. He will continue to be responsible for expanding and nurturing partnerships and will coordinate integration of research and prevention projects into translation and outreach activities. He interacts directly with Dr. Stallones (Director) in the Outreach Program, and also is an investigator on the Enhancing Translation/Dissemination Project in the Education/Translation Core.
DeVries, Allison, Center Coordinator, 7.80 calendar months (65% effort) in Year 02. Allison DeVries has an MPH in Epidemiology, with experience in community outreach on a local, regional, and national level. Her undergraduate training included a minor in Business. Ms. DeVries served as a Program Coordinator, Information Technology Team for NIOSH from 2008 to 2010, were she facilitated team meetings, and prepared progress reports for internal and external NIOSH communications; managed the internal project website and posted relevant development updates; built and implemented an online clearinghouse of occupational health publications; developed training modules/procedural document for RSS feeds; and created an Access database for the contact information of key stakeholders. She also worked as an Acute Poisoning Research Fellow at NIOSH during 2008 to 2009 and co-authored a chapter in a pesticide toxicology book, created training exercises on the surveillance system, and helped implement integrated pest management at NIOSH’s own facilities. She was raised in a farming community where her parents owned a dairy farm, and had the opportunity to manage a large-herd dairy operation (~1500 cows, 850 in lactation) for several years. She is also fluent in Spanish.

Ms. DeVries joined HICAHs in 2010 to fill the new role of HICAHs Center. She will provide support to the HICAHs Directors (Reynolds, Stallones) and Leadership team in management and coordination of HICAHs encompassing three primary functions – Administration, Networking/Outreach, and Feasibility Projects Management.

Administration duties include, but are not limited to the following: 1) serving as the point of contact for constituents, collaborators and regional stakeholders, and facilitating interactions with appropriate center faculty and staff; 2) coordinating and documenting center meetings, workshops, and conferences; 3) maintenance of data bases regarding center products and contacts (evaluation); and 4) assisting with preparation and submission of center reports, publications, and grant applications;

Networking and Outreach duties include, but are not limited to the following: 1) interfacing with the Internal and External Advisory Committees, the HICAHs Dairy Advisory Committee, and all lead investigators involved in the Center on a regular basis; 2) facilitating translation of research, education, and prevention projects and connecting HICAHS personnel to regional constituents; 3) coordinating and contributing to the Center website, and newsletters; 4) serving as key conduit to respond to constituent requests for assistance, linking inquiries to the appropriate resource; 5) coordinating Center Seminar Series, Workshops, and Conferences; and 6) participating in regional agricultural meetings including coordinating speakers to make presentations.

Feasibility (Pilot Projects) Program duties include, but are not limited to the following: 1) coordinating Feasibility (Pilot) Grant program; 2) updating calls for proposals and disseminating the calls via the HICAHs website and mailings to contacts throughout the region; 3) coordinating pilot grant reviews and communications, including award notices; and 4) tracking progress and final reports. Documentation of the Feasibility program will include methods of dissemination, a list of all proposals submitted, reviews and scores, and funding decisions. Investigators funded will submit logs via Center evaluation procedures on progress, final reports, students trained, collaborators, and results including presentations, abstracts, manuscripts, and R01 (large grant) submissions.

She will also contribute to the Outreach Program and to the “Enhancing Translation and Dissemination through Agricultural Partnership” project.

Gibbs, Julie, Assistant to Director, 1.20 calendar months (10% effort) in Year 02. Julie Gibbs is a Senior Research Associate in the department of Psychology and has 14 years of experience serving as the Associate Director for Outreach and Administration for the Colorado Injury Control Research Center. She will provide administrative assistance to the Director and Deputy Director as needed for priority projects such as development of tracking and management systems, preparation of center reports and grant applications, and organization of workshops and conferences.
Budget Justification (cont'd)

Petersen, Kathy, Accounting Technician III, 0.60 calendar months (5% effort) in Year 02. Kathy Petersen is an Accounting Technician III in the Department of Environmental and Radiological Health Sciences. Since the HICAHS Center is a major center in an academic setting which necessitates financial oversight, as well as additional duties to Ms. Petersen established job description, we are requesting additional administrative support for her role in managing the accounting aspects of the Center. She will be responsible for preparation of budgets and related documents, including coordinating sub-contracts for HICAHS and related grant proposals, accounting and monitoring of awarded budgets on a regular/monthly basis, assistance with preparation and submission of annual and final financial reports to NIOSH, directly coordinating with the CSU Office of Sponsored Programs. She will contribute 20% effort to HICAHS. 5% support is requested, the difference being provided by the Department of Environmental & Radiological Health Sciences.

Fringe rates are assessed at the rate of 24.4% in Year 02 for the Center Director, Deputy Director, Co-Investigators, Director's Assistant, and the Center Coordinator; 33.1% in Year 02 for the Accounting Technician III.

Supplies ($1,000)
Funds are requested for a HICAHS computer in Year 02 to be used for administrative and research related activities; as well as computer storage/accessories, printing cartridges for the HICAHS designated printer and other miscellaneous supplies as needed for the daily operation of the Center which are not provided by the department.

Travel - Domestic ($4,500)
Travel to participate in the NIOSH Ag Centers Directors meetings; travel funds are requested for members of the HICAHS External Advisory Board and for the HICAHS Dairy Advisory Board meetings.

Travel - International ($3,500)
As outlined in the Center narrative, HICAHS has organized an International Dairy Research Consortium to collaborate with other international research centers involved in improving the health and safety of dairy workers. Dairy workers throughout the U.S. and abroad are confronted with many of the same challenging issues that dairy workers in our region face. It would be advantageous for the HICAHS investigators to collaborate with other agricultural research centers (nationally and internationally) regarding successful injury and illness prevention strategies, tested dissemination channels, and novel approaches used to improve the health and safety of dairy workers globally. Such leveraging of resources will augment dairy research efforts for HICAHS investigators and lead to research with greater impact regionally, nationally, and internationally. Thus, funds are requested for international travel for one meeting per year to continue and grow our productive collaboration among researchers involved in dairy worker health and safety. The plan is for this consortium to meet in conjunction with an international agricultural health and safety conference to further maximize our resources.

Other Direct Costs ($1,800)
We will need funds to host all-day meetings (which some will consist of multiple days) with collaborators, community partners, the HICAHS External Advisory Board and the HICAHS Dairy Advisory Board. We also anticipate other costs associated with long distance phone and video-conferencing to effectively manage this center.

Indirect Costs ($42,035)
Indirect costs are calculated at 31.3% MTDC for Year 02.
PROGRESS REPORT SUMMARY

PROGRAM DIRECTOR / PRINCIPAL INVESTIGATOR
Stephen J. Reynolds

APPLICANT ORGANIZATION
High Plains Intermountain Center for Agricultural Health and Safety - HICAHS

TITLE OF PROJECT (Repeat title shown in Item 1 on first page)
Administrative and Planning Core

A. Human Subjects (Complete Item 6 on the Face Page)
   Involvement of Human Subjects □ No Change Since Previous Submission □ Change

B. Vertebrate Animals (Complete Item 7 on the Face Page)
   Use of Vertebrate Animals □ No Change Since Previous Submission □ Change

C. Select Agent Research
   □ No Change Since Previous Submission

D. Multiple PD/PI Leadership Plan
   □ No Change Since Previous Submission

E. Human Embryonic Stem Cell Line(s) Used
   □ No Change Since Previous Submission

SEE PHS 2590 INSTRUCTIONS.

WOMEN AND MINORITY INCLUSION: See PHS 398 Instructions. Use Inclusion Enrollment Report Format Page and, if necessary, Targeted/Planned Enrollment Format Page.

A. Specific Aims
No aims have been modified
Aim 1: To provide leadership and management;
Aim 2: To ensure interdisciplinary coordination and synergy through the structure and functions of the advisory boards (Internal Advisory Board; External Advisory Board; and Dairy Advisory Board) and continued engagement of HICAHS researchers and staff;
Aim 3: To coordinate an active outreach program;
Aim 4: To provide funding for Pilot/Feasibility Projects on topics of regional priority and on emerging issues in Public Health Service Region VIII;
Aim 5: To conduct continuous evaluation and feedback based on the Systems Theoretical Model and a REM-AIM Framework.
Aim 6: To establish a HICAHS Dairy Health and Safety Network and an International Dairy Consortium.

B. Studies and Results
All project activities have been initiated and are ongoing.

Aim 1: The HICAHS leadership team or Internal Advisory Board consisting of the Director, Deputy Directory, Coordinator, and PIs of the projects and programs meets on a weekly basis to review progress and coordinate follow up actions. A meeting including all HICAHS staff is held on a monthly basis to facilitate communication, coordination, and opportunities for synergism throughout the Center. Aims 3, 4, and 5 are facilitated through these weekly meetings and through more focused efforts as needed to provide direction, coordination, and resources. More detailed information on Aims 3-5, is provided in the Progress Reports for Outreach, Pilots, and Evaluation. HICAHS is co-sponsoring the Workshop on Research Translation with Vulnerable Worker Populations, June 7-8, 2012. In addition, Dr. Reynolds is serving as Chair of the NIOSH Ag Center Directors, providing national leadership.

Aim 2: All Advisory Boards meetings this year were organized to focus on problem solving, strategic planning, and development of networking and collaborative opportunities among board members as well as with HICAHS staff. In addition to in person meetings, we have kept in close contact with with Board members on a regular basis and have worked closely with them on relevant action items. Board members have explicitly highlighted the value of networking and initiating new relationships with other board
Aim 2 – Continued. members as a result of these meetings. The External Advisory Board met in January 2012. One outcome is the development of new agricultural-related curricular for the University of Colorado Rural Medicine Residency with a series of new lectures/discussions beginning Fall 2012. The Dairy Advisory Board first met in April 2011 and is scheduled to meet again this summer – please see next paragraph for outcomes this year.

Aim 6: The HICAHS Dairy Health and Safety Network was developed with two goals: 1) to create mechanisms for improved multi-directional communication between researchers and producers, and 2) to develop a structure to efficiently disseminate information on evidence-based practices (R2P) to improve health on dairies. The Network consists of numerous producers and extension specialists in 10 states, equipment manufacturers, researchers at other Ag Centers, and producer organizations. Producers now often seek advice from HICAHS researchers for answers to address farm-specific safety issues. We have established partnerships with industry-leading service and equipment companies (DeLaval and Alpha Technology, Inc.) to develop and evaluate the design of milking tools that will enable workers to perform milking tasks more efficiently, with reduced risk for musculoskeletal disorders. The Dairy Advisory Board plays an instrumental role in this effort. One example of outcomes is sponsorship (in partnership with the I-29 Dairy Consortium) of health and safety workshops in four states (MN, IA, SD, and NE) entitled What You Need to Know About OSHA Before OSHA Needs to Know About You. These sessions proved a successful medium to disseminate safety information to owners, managers and workers thus facilitating the translation of information into practice (r2p). Another workshop, sponsored by DeLaval, a leading dairy equipment manufacturer, was attended by 21 Wisconsin producers where they learned various safety topics and numerous OSHA regulations related to insuring the health and safety of dairy workers.

The International Dairy Research Consortium, led by Dr. Reynolds, has engaged researchers from Sweden, Italy, Germany, Finland, Canada, Australia, New Zealand, Ireland and Brazil. In the first meeting (July 2011) attendees identified current research, needs and issues in their respective countries and were able to establish short term, intermediate and long term objectives. The group’s membership has increased and has continued meeting at International Agricultural/Dairy Conferences to begin to address these objectives (August 2011). Several joint proposals have been developed among different members. The Consortium is working on a series of articles for a dedicated issue of the Journal of Agromedicine covering the state of current knowledge concerning the dairy industry, identification of gaps, and paths forward. This is scheduled to be published in spring 2013. Upcoming meetings will be held in Spain (July 2012), Sweden (August 2012), and New Zealand (September 2012). Drs. Reynolds, Kiefer, Lee, and Lundquist were invited to organize a preconference program focusing on Dairy in conjunction with the Safety 2012 World Conference in New Zealand.

C. Significance
The HICAHS approach is grounded on engaging, listening to stakeholders, and responding to their needs with sound and relevant programs and partnerships. The focus of our Center involves Industrialized Large Animal Production (Dairy, Beef Cattle), while being responsive to the unique and diverse needs of the region, including developing capacity to address health/safety in row crops and forestry. The Administrative/Planning Core is organized to facilitate collaboration and uses an innovative approach to foster synergy among the projects and partners that constitute this Center. The Goal of the Administrative and Planning Core is to provide overall vision, administration, and management of the Center. This application addresses promotion of health and reduction in work hazards among high risk industries, agriculture and forestry. Further there is a focus on vulnerable populations within the workforce involved. Innovative approaches are used to engage the communities affected by injuries, illnesses and reduced productivity resulting from these public health concerns.

D. Plans
We are planning on expanding the OSHA workshops for the Dairy Industry and have also begun working on development of a more ambitious Occupational Health and Safety Management System for the industry. The International Research Consortium will complete papers for the dedicated issue of the Journal of Agromedicine, and will use upcoming meetings to make progress towards the other goals and action items.
identified in initial meetings. Drs. Reynolds, Kiefer, Lee, and Lundquist will host and manage the pre-conference program at the Safety 2012 World Conference in New Zealand.

E. Publications

Center Products

Journal Articles


Reynolds, Stephen J.


Poole, J. A., & Romberger, D. J. (2012). Immunological and inflammatory responses to organic dust in agriculture. Current Opinion in Allergy and Clinical Immunology, 12(2), 126-132. 110.1097/AOI.1090b1013e3283511d3283510e.


Conferences/Presentations


Reynolds, Stephen J.

**Administrative and Planning Core**

Pate, M. (2011). Farm Owner/Operators' Perceptions of Risk Associated with Confined Spaces in Agriculture. Presented at the ASABE Annual International Meeting, Louisville, KY.


**Seminars/webinars/CE/Lectures/workshops/workgroups/multimedia**


**Newsletters/trade publications**


**Conference Leadership**


MEMORANDUM

To: Stephen Reynolds, ERHS

From: Janell Barker, Senior Coordinator
       Institutional Review Board

Re: High Plains Intermountain Center for Agricultural Health & Safety

Funding Source: CDC/NIOSH (Pass #103069)

The above-referenced project has been administratively reviewed on July 20, 2011 and it has been determined that the project listed above is an overall umbrella grant that does not include human subjects, but will include individual projects that will involve human subjects. Each Principal Investigator will submit a separate human subjects protocol once each protocol has been fully developed.

It appears at this point to meet the requirements of 45 CFR 46.118, “Application and proposal lacking definite plans for involvement of human subjects.” The regulations allow awards for such projects to be made prior to review and approval by an IRB, but no human subjects may be involved until the review and approval has taken place.

Once the project is funded, and before humans are involved as participants, please be sure each protocol is submitted for review through eProtocol. The electronic system is available via the IRB web page http://web.research.colostate.edu/rica/hr/hrc.aspx; follow the links.

Colorado State University, through its IRB, is charged with prospective approval of activities meeting the federal definitions of human subject and research. CSU has certified to the federal government that each proposal for research covered by our federal assurance has been reviewed and approved by the IRB. That review must ascertain a variety of things, including that the risk is minimized and appropriate, and that participants be fully informed and that their participation is voluntary (these are detailed in the federal regulations).

If the federal human research protection requirements are circumvented, this could jeopardize the research funding at CSU, and an accumulation of such violations could cause the institution to lose its privilege to review human research protocols.

Data collected prior to obtaining IRB approval cannot be used for research purposes or for publication. Federal regulations do not allow the IRB to retrospectively approve data collected without IRB approval.

Please contact me at 491-1655 or by email at janell.barker@research.colostate.edu if you have questions.

Date of correspondence: 7/20/2011
Program Director/Principal Investigator (Last, first, middle): Reynolds, Stephen J.

Administrative and Planning Core

GRANT NUMBER
5U54OH008085-09

CHECKLIST

1. PROGRAM INCOME (See instructions.)
All applications must indicate whether program income is anticipated during the period(s) for which grant support is requested. If program income is anticipated, use the format below to reflect the amount and source(s).

<table>
<thead>
<tr>
<th>Budget Period</th>
<th>Anticipated Amount</th>
<th>Source(s)</th>
</tr>
</thead>
</table>

2. ASSURANCES/CERTIFICATIONS (See instructions.)
In signing the application Face Page, the authorized organizational representative agrees to comply with the policies, assurances and/or certifications listed in the application instructions when applicable. Descriptions of individual assurances/certifications are provided in Part III of the PHS 398, and listed in Part I, 4.1 under Item 14. If unable to certify compliance, where applicable, provide an explanation and place it after the Progress Report (Form Page 5).

3. FACILITIES AND ADMINISTRATIVE (F&A) COSTS
Indicate the applicant organization’s most recent F&A cost rate established with the appropriate DHHS Regional Office, or, in the case of for-profit organizations, the rate established with the appropriate PHS Agency Cost Advisory Office.

- DHHS Agreement dated: 06/28/2011
- No Facilities and Administrative Costs Requested.

No DHHS Agreement, but rate established with ______________________________ Date ______________________________

CALCULATION*

Entire proposed budget period: Amount of base $134,298 x Rate applied 31.3% = F&A costs $42,035

Add to total direct costs from Form Page 2 and enter new total on Face Page, Item 8b.

*Check appropriate box(es):

- Salary and wages base
- Modified total direct cost base
- Other base (Explain)

Explanation (Attach separate sheet, if necessary):
DETAILED BUDGET FOR NEXT BUDGET PERIOD – DIRECT COSTS ONLY

FROM 09/15/2012 THROUGH 09/14/2013

GRANT NUMBER
SU54OH008085-09

List PERSONNEL (Applicant organization only)
Use Cal, Acad, or Summer to Enter Months Devoted to Project
Enter Dollar Amounts Requested (omit cents) for Salary Requested and Fringe Benefits

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<th>NAME</th>
<th>ROLE ON PROJECT</th>
<th>Cal. Mnths</th>
<th>Acad. Mnths</th>
<th>Summer Mnths</th>
<th>SALARY REQUESTED</th>
<th>FRINGE BENEFITS</th>
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<td></td>
<td>6,860</td>
<td>1,674</td>
<td>8,534</td>
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</table>

SUBTOTALS

|                |                |            |            |              | 6,860           | 1,674           | 8,534  |

CONSULTANT COSTS

EQUIPMENT (Itemize)

SUPPLIES (Itemize by category)

TRAVEL

INPATIENT CARE COSTS

OUTPATIENT CARE COSTS

ALTERATIONS AND RENOVATIONS (Itemize by category)

OTHER EXPENSES (Itemize by category)

RFA Publication Charges - $500; Emerging Issues - $5,287; Pilot Projects - $50,000

OTHER EXPENSES

SUBTOTAL DIRECT COSTS FOR NEXT BUDGET PERIOD

$ 64,321

CONSORTIUM/CONTRACTUAL COSTS

DIRECT COSTS

CONSORTIUM/CONTRACTUAL COSTS

FACILITIES AND ADMINISTRATIVE COSTS

TOTAL DIRECT COSTS FOR NEXT BUDGET PERIOD (Item B, Face Page)

$ 64,321
BUDGET JUSTIFICATION

Provide a detailed budget justification for those line items and amounts that represent a significant change from that previously recommended. Use continuation pages if necessary.

Personnel ($8,534)
Volckens, John, Ph.D., Program Director, Colorado State University, 0.45 academic person-month, 0.15 summer person-months (5% effort) in Year 02. Dr. Volckens will direct the pilot/feasibility projects program. Dr. Volckens' primary roles will be: to develop and distribute the annual RFP, to coordinate and facilitate the proposal review process, and to communicate the outcomes and solicit feedback on the annual review to both the Internal and External HICAHS Advisory Boards.

Fringe rates are assessed at the rate of 24.4% in Year 02 for the Program Director.

Other Direct Costs ($55,787)
Publication fees for issuance of the annual request for applications: $500.00; Pilot/feasibility project awards $50,000.00; HICAHS director's discretionary fund for emerging issues: $5,287.

Indirect Costs ($31,196)
Indirect rates are calculated at 48.5% MTDC in Year 02.

CURRENT BUDGET PERIOD

<table>
<thead>
<tr>
<th>FROM</th>
<th>THROUGH</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/15/2011</td>
<td>09/14/2012</td>
</tr>
</tbody>
</table>

Explain any estimated unobligated balance (including prior year carryover) that is greater than 25% of the current year's total budget.
N/A
A. Specific Aims

Aim 1: To develop new and creative research, prevention, intervention, outreach, education, evaluation or translation related to agricultural safety and health within Federal Region VIII.

Aim 2: To foster the development of new, collaborative partnerships between HICAHS members, private industry, and regional State and Federal agencies with stakeholder interests in agricultural health safety.

Aim 3: To build research capacity related to agricultural health and safety in Federal Region VIII.

Aim 4: To address emerging issues in agricultural health and safety through the implementation of rapid, extramurally-funded research projects.

No change in the overall specific aims as proposed.
B. Studies and Results

The 2011 Request for Applications (RFA) was distributed on 5 October 2011 with a proposal due date of 15 November 2011. A total of six applications were received in response to the RFA. Peer review of the applications was conducted on 15 December 2011. Of the six applications reviewed, three were funded, each for a one-year duration and with a project budget of approximately $15,000 (including indirect costs). The second year of a two-year project by Michael Pate was also funded. Principle investigators and project titles for the awarded projects are provided below:

Margaret Davidson, Colorado State University, 'Bioaerosol Monitoring: preventing the spread of infectious diseases among farmers.'

Meghan Mensack, Colorado State University, 'In vitro microsystem for determining acute pesticide toxicity.'

Amy Warner, Colorado Department of Public Health and Environment, 'Acute Pesticide Poisoning Experiences of Certified Applicators in Colorado.'

Michael Pate, Utah State University, 'Reducing Injuries Associated with Confined Spaces in Agriculture' (Year 2).

The $10,000 in the Director's discretionary fund for emerging research will be awarded later this Spring.

C. Significance
Nothing new to report.

D. Plans
The 2012 RFA is scheduled to be disseminated on 1 July 2012 with estimated project start dates of 15 September. This timeline will align the pilot project program with the overall HICAHS funding cycle.

E. Publications
None.

F. Project Generated Resources
None.
Inclusion Enrollment Report

This report format should NOT be used for data collection from study participants.

**Study Title:** Acute Pesticide Poisoning of Certified Applicators in Colorado  
**Total Enrollment:** 2,000  
**Grant Number:** 2U54OH008085-08

### PART A. TOTAL ENROLLMENT REPORT:

#### Number of Subjects Enrolled to Date (Cumulative) by Ethnicity and Race

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<th>Males</th>
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#### Racial Categories

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### PART B. HISPANIC ENROLLMENT REPORT:

#### Number of Hispanics or Latinos Enrolled to Date (Cumulative)

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<td>Native Hawaiian or Other Pacific Islander</td>
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</tr>
</tbody>
</table>

* These totals must agree.  
** These totals must agree.
To: Amy Warner  
CC: Meredith Towle

From: Carol Stanton Chair, IRB

Date: February 14, 2012

RE: Acute Pesticide Poisoning Experiences of Certified Applicators in Colorado (CDPHE IRB# 2011 012)

Thank you for submitting the above referenced project to the IRB at the Colorado Department of Public Health and Environment. The department’s Occupational Health & Safety Program is collaborating with the Colorado Department of Agriculture (CDA), Pesticide Applicator Program, and also agriculture injury/illness epidemiology researchers from Colorado State University (CSU).

The IRB approved the project in accordance with expedited procedures per 45 CFR 46.110 categories 5 and 7: Research involving materials (data, documents, records, etc.) that already exist, and Research on individual or group characteristics that includes surveys.

The purpose of the project is to better understand the circumstances associated with acute pesticide poisoning events in a sample group of workers at high risk for exposure. The health department program has public health authority (CRS 25, Article 1.5) to develop strategies in order to understand the burden of work-related injury and illness in Colorado and foster the use of surveillance data to set priorities for state-level intervention and prevention.

The Colorado Department of Agriculture will provide to the program a publically available list of potential recruits (licensed applicators or operators). A sample of set of 2000 persons, aged 18 and older, will be selected as potential subjects to participate in the self administered survey. Each potential subject receives a information letter, $2.00 thank you gift, self administered survey, and self addressed envelope to return the completed survey. The return of the completed survey implies consent to participate in the research.

This project poses minimal risk to participate. Risk includes a breach of confidentiality, privacy or security. The subject matter may cause emotional discomfort since some questions are about a pesticide exposure that may have resulted in an unpleasant experience. There are adequate assurances of data use, confidentiality, privacy, security, data transfer and storage.

The correspondence and survey will not be translated into Spanish. The Colorado Department of Agriculture does not provide Spanish licensing exams or Spanish training materials. Thus, the health department program has no reason to believe there would be Spanish speaking only persons in the list of potential recruits provided by CDA.

Requirements of informed consent are waived under 46:116(d): (1) Involves no more than minimal risk to the subjects; (2) The waiver or alteration will not adversely affect the rights and welfare of the subjects; (3) Could not practically be carried out without the waiver or alteration.

The PI is responsible for the prompt reporting to the IRB of any serious subject-related adverse events associated with this project. Federal regulations require a Continuing Review to renew approval of this project within a 12-month period from the approval date shown on the Protection of Human Subjects Assurance Form, dated 02/14/2012.
MEMORANDUM

TO: Michael Pate

FROM: Richard D. Gordin, Acting IRB Chair
      True M. Fox, IRB Administrator

SUBJECT: Reducing Injuries Associated with Confined Spaces in Agriculture

Your proposal has been reviewed by the Institutional Review Board and is approved under exemption #2.

X There is no more than minimal risk to the subjects.
   There is greater than minimal risk to the subjects.

This approval applies only to the proposal currently on file. Any change in the methods/objectives of the research affecting human subjects must be approved by the IRB prior to implementation. Injuries or any unanticipated problems involving risk to subjects or to others must be reported immediately to the IRB Office (797-1821).

The research activities listed below are exempt based on the Department of Health and Human Services (DHHS) regulations for the protection of human research subjects, 45 CFR Part 46, as amended to include provisions of the Federal Policy for the Protection of Human Subjects, June 18, 1991.

Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (a) information obtained is recorded in such a manner that human subjects can be identified, directly or through the identifiers linked to the subjects; and (b) any disclosure of human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

2.
Program Director/Principal Investigator (Last, first, middle): Reynolds, Stephen J.

Pilots/Feasibility Projects & Emerging Issues Program

GRANT NUMBER
5U54OH008085-09

CHECKLIST

1. PROGRAM INCOME (See instructions.)
All applications must indicate whether program income is anticipated during the period(s) for which grant support is requested. If program income is anticipated, use the format below to reflect the amount and source(s).

<table>
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<tr>
<th>Budget Period</th>
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2. ASSURANCIES/CERTIFICATIONS (See Instructions.)
In signing the application Face Page, the authorized organizational representative agrees to comply with the policies, assurances and/or certifications listed in the application instructions when applicable. Descriptions of individual assurances/certifications are provided in Part III of the PHS 398, and listed in Part I, 4.1 under Item 14. If unable to certify compliance, where applicable, provide an explanation and place it after the Progress Report (Form Page 5).

3. FACILITIES AND ADMINISTRATIVE (F&A) COSTS
Indicate the applicant organization’s most recent F&A cost rate established with the appropriate DHHS Regional Office, or, in the case of for-profit organizations, the rate established with the appropriate PHS Agency Cost Advisory Office.


☐ No DHHS Agreement, but rate established with ______________________________ Date ________________

CALCULATION*

Entire proposed budget period: Amount of base $ 64,321 x Rate applied 48.5 % = F&A costs $ 31,196

Add to total direct costs from Form Page 2 and enter new total on Face Page, Item 8b.

*Check appropriate box(es):

☐ Salary and wages base ☑ Modified total direct cost base ☐ Other base (Explain)

☐ Off-site, other special rate, or more than one rate involved (Explain)

Explanation (Attach separate sheet, if necessary):
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<thead>
<tr>
<th>NAME</th>
<th>ROLE ON PROJECT</th>
<th>Cal. Mths</th>
<th>Acad. Mths</th>
<th>Summer Mths</th>
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**SUBTOTALS**

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**CONSULTANT COSTS**

**EQUIPMENT (Itemize)**

**SUPPLIES (Itemize by category)**

**TRAVEL**

Travel for Dairy Advisory Board and Dairy Network meetings and to visit outreach partners 8,826

**INPATIENT CARE COSTS**

**OUTPATIENT CARE COSTS**

**ALTERATIONS AND RENOVATIONS (Itemize by category)**

**OTHER EXPENSES (Itemize by category)**

Community Outreach Activities 3,500

**SUBTOTAL DIRECT COSTS FOR NEXT BUDGET PERIOD**

$ 40,113

**CONSORTIUM/CONTRACTUAL COSTS**

DIRECT COSTS

FACILITIES AND ADMINISTRATIVE COSTS

**TOTAL DIRECT COSTS FOR NEXT BUDGET PERIOD** *(Item 8a, Face Page)*

$ 40,113
Program Director/Principal Investigator (Last, First, Middle): Reynolds, Stephen J.

Outreach Program

<table>
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<th>GRANT NUMBER</th>
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**Personnel ($27,787)**

Stallones, Lorann, M.P.H., Ph.D., Program Director, Colorado State University, 0.66 calendar months (5.5% effort) in Year 02. Dr. Stallones will be responsible for the management and implementation of the Outreach Program, including financial management. Dr. Stallones will lead the effort of developing the Partner Directory and coordinating requests for outreach projects from AFF partners.

Lamm, Dennis, Ph.D., Co-Investigator, Colorado State University, 0.09 academic person-months, 0.03 summer person-months, (1% effort) in Year 02. Dr. Lamm will provide a link with Cooperative Extension and other AFF partners to facilitate outreach activities. He will supervise a graduate student from the Master degree program in agriculture to assist with the activities.

Devries, Allison, MPH, Center Coordinator, Colorado State University, 0.60 calendar months (5% effort) in Year 02. Ms. DeVries will serve as program coordinator and be in charge of planning the meetings of the Dairy Network and the Dairy Advisory Board. She will maintain records of the outreach program as needed for the Center Administration. She will also assist in the development of summary sheets for the website related to NAD and other duties as assigned.

(continued)

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</table>

Explain any estimated unobligated balance (including prior year carryover) that is greater than 25% of the current year’s total budget.

N/A
Program Director/Principal Investigator (Last, First, Middle): Reynolds, Stephen J.
Outreach Program

Budget Justification (cont’d)

To-Be-Named, Graduate Research Assistant, Colorado State University, 3.0 calendar months, (25% effort) in Year 02. A graduate student will be hired to assist with outreach activities including identifying new partners, conducting the survey of partners, and providing support for all program activities.

Fringe rates are assessed at 24.4% in Year 02 for the Program Director, Co-Investigators, and Center Coordinator; 3.5% for the Graduate Research Assistant.

Travel ($8,826)
Travel funds are requested to support the Dairy Advisory Board and Dairy Network meetings and to visit outreach partners as needed in the region.

Other Direct Costs ($3,500)
Funds are requested each year to provide support for partner related outreach activities, for conferences and for workshops as needed.

Indirect Costs ($12,555)
Indirect costs are calculated at 31.3% MTDC for Year 02.
A. Specific Aims – No Aims have been modified.

B. Studies and Results

Specific Aim 1: Expanding connections: A preliminary list of partners has been developed and will be used to conduct a survey among partners to determine how they select interventions being used in their communities.

Specific Aim 2: Networking activities: We have established partnerships with industry-leading service and equipment companies (DeLaval and Alpha Technology, Inc.) to develop/evaluate milking tools to enable workers to perform milking tasks more efficiently, reducing risk for musculoskeletal disorders. The Dairy Advisory board met in April 2011. We communicated with the Dairy Advisory Board and Network members frequently by email and phone over the past year. The Board will meet in summer 2012. Action items were developed at the initial meeting and refined in following communications. Board members highlighted the value of networking and new relationships with other board members. One outcome this past year is sponsorship (partnering with the I-29 Dairy Consortium) of workshops in four states (MN, IA, SD, and NE) entitled What You Need to Know About OSHA Before OSHA Needs to Know About You. A workshop, sponsored by DeLaval was attended by 21 Wisconsin producers focusing on OSHA regulations related to insuring the health and safety of dairy workers. The International Dairy Research Consortium, led by Dr. Reynolds, has engaged researchers from 12 nations. In the first meeting (July 2011) attendees identified current research, needs and established short term, intermediate and long term objectives/action items. The group’s membership has increased and has continued meeting at International Conferences to begin to address these objectives. Several joint proposals have been developed. The Consortium is working on a dedicated issue of the Journal of Agromedicine covering current knowledge concerning the dairy industry, identification of gaps, and pathways forward. This will be published in spring 2013. We have began collecting and sharing materials (programs, publications, manuals) addressing health and safety on Dairies.

Specific Aim 3:

Cooperative Extension and Agricultural Organizations Initiated Programs: HICAHS will support education and training programs through funding small projects. Review of proposals will involve a minimum of two HICAHS Internal Advisory Board members. Applications will be reviewed for: fit with the mission; significance of problem and demonstrated need; project methods and procedures; feasibility of project and identified work plan. Recipients will complete a project evaluation within 60 days after completion. Evaluation information will be entered into an outreach program database and analyzed annually to provide input for summative and process evaluation.
B. Studies and Results - Continued

**HICAHS inspection/correction checklists:** HICAHS faculty in collaboration with the OSHA consultation group and Cooperative Extension agents will continue to identify and develop inspection/correction checklists that can be used by producers to identify and mitigate hazards. This approach is a standard industrial hygiene and safety approach that has been proven to be effective in communicating with employers and employees to reduce work related illnesses and injuries. We have been working with OSHA Consultation, Dairy Extension specialists, and other members of our Dairy Network in NE, TX, IA, CA to plan and begin developing tools for the Dairy industry as part of a broader Occupational Health and Safety Management System.

**Colorado Environmental Pesticide (CEP) Education Program:** In collaboration with the Mountain and Plains ERC we worked with the CEP to develop a video for training of grower organizations and workers on EPA Worker Protection Standard. An English version is near completion, and a Spanish language version will be developed.

**Specific Aim 4:**

**Update HICAHS Website (http://www.hicahs.colostate.edu):** The HICAHS website has been updated to include a link to the NASD website, to request support for HICAHS activities and to reflect more recent activities. Updating of the website is an ongoing activity of the Outreach Core. The HICAHS Dairy Initiatives are being addressed in this website update, including information to facilitate networking and sharing of information/resources.

**To provide information from HICAHS activities to be included in NASD website.**

HICAHS outreach and other collaborators will develop materials to be included on the NASD website. In collaboration with the University of Kentucky, Southeast Center, as research to practice and outreach materials are developed this information will be provided to the administrator of the database, Conceptual Arts, Inc. in Gainesville Florida to be uploaded onto the NASD database. Formats for materials may include video, text, or interactive materials.

**Specific Aim 5:**

**Conferences and workshops:** A Workshop on Research Translation with Vulnerable Worker Populations with HICAHS support along with MAPERC, CICRC, CPWR and the NIOSH Regional office in Denver will take place June 7-8, 2012 in Fort Collins. Currently there are more than 50 registrants for the workshop. Dr. John Howard will be giving a keynote address. A copy of the program is located at the following website: http://www.r2p.colostate.edu/program.html. To facilitate the HICAHS International Dairy Research Consortium we have organized sessions at upcoming meetings to be held in Spain (July 2012), Sweden (August 2012), and New Zealand (September 2012). Dr. Reynolds was invited to organize a pre-conference program focusing on Dairy in conjunction with the Safety 2012 World Conference in New Zealand.

**C. Significance**

HICAHS serves PHS Region 8 (Utah, Wyoming, Montana, Colorado and the Dakotas), whose agriculture is largely defined by its unique western climate and geography. This region includes agricultural characteristics of both the Midwest and the West, including differences in production agriculture ranging from the field crops, beef and dairy cattle of the great plains to the orchards and truck farming of the far west. Outreach within in HICAHS involves providing technical assistance, consultation, educational materials, and training activities that engage external constituencies. The HICAHS outreach program has played a crucial role in providing information and tools to promote a safer and healthier work environment in agriculture and forestry.

**D. Plans**

Two consensus conference grants will be sought to address international issues. One will be aimed at respirable dust exposures and the second will be on musculoskeletal conditions and ergonomics. The Agricultural Safety and Health: Focus on Dairy meeting in New Zealand will address both of these topics and other emerging issues. Drs. Reynolds, Keifer, Lee, and Lundqvist will host and manage the pre-conference program at the Safety 2012 World Conference in New Zealand.

We will expand the OSHA workshops for the Dairy Industry and have also begun working on development of an Occupational Health and Safety Management System for the industry. The International Research Consortium will complete papers for the dedicated issue of the Journal of Agromedicine, and will use upcoming meetings to make progress towards the other goals and action items identified in initial meetings.
E. Publications


Doughratre, D. Special Issue: Dairy Farm Safety and OSHA—Approaches for Effective Management and Worker Training. New Mexico State University Dairy Extension Newsletter, September 2011, Volume 2, Number 4 & 5.

Presentations/Webinars

AGRISAFE NETWORK WEBINAR, November 9, 2011 Epidemiologic and Occupational Investigation of an Escherichia coli O111 Outbreak Associated with a Correctional Facility Dairy — Colorado, 2010

Incorporating worker safety into daily farm management activities. 2011 Dairy Summit, December 7-8, 2011, Wisconsin Dells, WI.

Creating Safety Culture in Livestock Operations video (9-minutes) produced in English and Spanish. Distributed to more than 250 (as of 1/2012) livestock and dairy producers in the Mountain West states. Video (Creating Safety Culture in Livestock Operations) posted (4/2012) on YouTube for broad dissemination.
Program Director/Principal Investigator (Last, first, middle): Reynolds, Stephen J.
Outreach Program

GRANT NUMBER
5U54OH008085-09

CHECKLIST

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Indicate the applicant organization's most recent F&A cost rate established with the appropriate DHHS Regional Office, or, in the case of for-profit organizations, the rate established with the appropriate PHS Agency Cost Advisory Office.

☐ No DHHS Agreement, but rate established with ______________________________ Date ______________________________

CALCULATION*

Entire proposed budget period: Amount of base $40,113 x Rate applied 31.3% = F&A costs $12,555

Add to total direct costs from Form Page 2 and enter new total on Face Page, Item 8b.

*Check appropriate box(es):
☐ Salary and wages base ☒ Modified total direct cost base ☐ Other base (Explain)
☐ Off-site, other special rate, or more than one rate involved (Explain)

Explanation (Attach separate sheet, if necessary):
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<th>Summer Mths</th>
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**SUBTOTALS**

|                |                |           |            |            | 170,585          | 41,623          | 212,208 |

**CONSULTANT COSTS**

Elfman - $1,000; Kirychuk - $2,000; Nonnenman - $2,000

5,000

**EQUIPMENT (itemize)**

**SUPPLIES (itemize by category)**

Sampling media supplies; Consumable, reagents, standards, etc for microbial analyses; Recombiant Factor (rFC) assays; 3-hydroxy fatty acids (3OHFA), muramic acid; Ergosterol analyses (GC/MSMS); EAVES aerosol sampler cell studies; Supplies for shipping samples; Kits for cytokine testing.

27,507

**TRAVEL**

Travel (mileage) to collect samples at field sites

576

**INPATIENT CARE COSTS**

**OUTPATIENT CARE COSTS**

**ALTERATIONS AND RENOVATIONS (itemize by category)**

**OTHER EXPENSES (itemize by category)**

Microbial analysis conducted by Dr. Hanson at RTL; Participant incentives; photocopying; postage; long distance telephone charges; video-conferencing for coordination of project; Irradiation charges

6,100

**SUBTOTAL DIRECT COSTS FOR NEXT BUDGET PERIOD**

$251,391

**CONSORTIUM/CONTRACTUAL COSTS**

| DIRECT COSTS | 20,000 |
| FACILITIES AND ADMINISTRATIVE COSTS | 9,700 |

**TOTAL DIRECT COSTS FOR NEXT BUDGET PERIOD (Item 8a, Face Page)**

$281,091
Provide a detailed budget justification for those line items and amounts that represent a significant change from that previously recommended. Use continuation pages if necessary.

**Personnel ($212,208)**

Reynolds, Stephen, Ph.D., Principal Investigator, Colorado State University, 0.99 academic person-months, 0.33 summer person-months (11% effort) in Year 02. Dr. Reynolds is Director of the High Plains Intermountain Center for Agricultural Health and Safety. He is a Professor and Head of the Occupational and Environmental Health Section in the Department of Environmental and Radiological Health Sciences at Colorado State University. He is recognized as an international leader in the application of industrial hygiene to agriculture, particularly for his work on endotoxins and respiratory disease (more than 90 peer reviewed publications). He is also recognized for his leadership in agricultural health and more broadly in occupational health on a national and international level. He has been Director of HiCAHS since May 1, 2002, and was previously Deputy Director of the Great Plains Center for Agricultural Health (GPCAH) 1995-97, and Director 1997-2001. He is also the founding Deputy Director of the new Mountain and Plains ERC (established 2007), a partnership between Colorado State University and the University of Colorado within the Colorado School of Public Health. He has extensive expertise in exposure assessment, and in particular size selective sampling for bio-aerosols including laboratory and epidemiological studies of agricultural dusts. He has successfully led collaborated with the investigators organized for this project for many years, and they have been a productive research team.

He will have overall responsibility for design and conduct of this study, and will directly supervise recruiting, field sampling, and laboratory analyses of bioaerosols, endotoxin, and chemical markers. He will lead preparation of reports and publications, and coordination with other HiCAHS projects related to the Dairy industry including translation and dissemination of results.

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Explain any estimated unobligated balance (including prior year carryover) that is greater than 25% of the current year's total budget. N/A
He will devote 15% effort in Year 02. 11% salary support is being requested with 4% support being provided by the Department of Environmental & Radiological Health Sciences in Year 02;

Volckens, John, Ph.D., Co-Investigator, Colorado State University, 0.90 academic person-months, 0.30 summer person-months (10% effort) in Year 02. Dr. John Volckens is an Associate Professor of Environmental and Occupational Health at Colorado State University. His research interests involve human exposure to airborne particles, aerosol measurement, and air pollution-related disease. He received a PhD from the University of North Carolina at Chapel Hill and then went on to Postdoc at the U.S. EPA’s National Exposure Research Laboratory in Research Triangle Park, North Carolina. He is the recipient of the AIHA Journal’s ‘Best Paper’ award in 1999, has served two terms as Chair of AIHA’s Aerosol Technology Committee, and is the former President of the Board of Directors for the Journal of Occupational and Environmental Hygiene. Dr. Volckens has experience participating in both national (NIH-P01, NIOSH internal funding) and pilot-level (NIOSH-ERC Pilot) review panels and maintains an active, federally-funded research program in environmental and occupational exposure assessment.

Dr. Volckens’s primary roles will be performance of the EAVES cell studies and he will also direct mRNA analyses of cytokines. He contributed to overall study design and will contribute to data analysis, manuscript and report preparation.

Keefe, Thomas, Ph.D., Co-Investigator, Colorado State University, 0.45 academic person-months, 0.15 summer person-months (5% effort) in Year 02. Dr. Keefe is a Professor, Department of Environmental and Radiological Health Sciences, Colorado State University. Dr. Keefe, Head of the Epidemiology Section, is a biostatistician with more than 35 years of experience in statistical design and analysis of environmental and epidemiological studies. He has collaborated on related projects with Dr. Reynolds since 2001. Dr. Keefe will provide direction on statistical design and analysis for this project.

Goodridge, Lawrence, Ph.D., Co-Investigator, Colorado State University, 0.45 academic person-months, 0.15 summer person-months (5% effort) in Year 02. Dr. Goodridge is an Associate Professor in the Department of Animal Sciences, College of Agriculture and is a key member of the Center for Meat Safety and Quality. His primary research focus encompasses the development of biosensors for rapid detection of foodborne and waterborne bacterial and viral pathogens. Secondary research interests include characterization of the genetic determinants of antibiotic resistance in bacteria isolated from food production animals. Other research interests include developing novel biocontrol methods to reduce the foodborne pathogen load of livestock, and development of non thermal food processing methods for minimally processed foods. His research is currently funded by the Colorado State University Infectious Disease Super Cluster, Colorado Water Resources Research Institute, National Groundwater Research and Educational Foundation, the Hewlett Packard Corporation, United States Department of Agriculture CSREES and the National Oceanic and Atmospheric Association, in addition to HICAHS. He has two patents and one provisional patent submitted. He has twenty three refereed publications, with 5 more submitted. Dr. Goodridge currently serves on the Editorial Boards of 4 journals - Applied and Environmental Microbiology, the Journal of Food Protection, Bacteriophage, and Agriculture, Food and Analytical Bacteriology. He has previously collaborated with Drs. Reynolds and Dooley. Dr. Goodridge’s primary role will be to contribute to culturable and molecular biological analysis of bacteria and fungi. He will also contribute to data analysis, manuscript and report preparation.

Mehaffy, John, Research Associate III, Colorado State University, 12 calendar months (100% effort) in Year 02. John Mehaffy, M.S. – is a Research Associate III in the Department of Environmental and Radiological Health Sciences, Colorado State University, and is responsible for managing laboratory and field work for Dr. Reynolds HICAHS research projects. He has an MS in Industrial Hygiene from the University of Iowa and has extensive experience in conducting field research in agricultural environments and in laboratory analysis of endotoxin. He will manage the laboratory and field aspects of this project under the direction of Dr. Reynolds. He will also participate in recruiting, lead data collection in the field and conduct the rFC endotoxin assay.
Budget Justification (cont’d)

Bradford, Mary, Research Associate II, Colorado State University, 6.3 calendar months (52.5% effort) in Year 02. Ms. Bradford is a Research Associate II in the Department of Environmental and Radiological Health Sciences, Colorado State University. She has an Associate Degree of Applied Medical Science and has more than 20 years experience in conducting medical research including spirometry, phlebotomy, and recruiting. She has been responsible for recruitment of participants, phlebotomy, spirometry and other aspects of data collection and management on current studies by Dr. Reynolds research group related to this project. She will contribute to recruiting and data collection including questionnaires, spirometry, and phlebotomy.

Dooley, Gregory, Ph.D., Research Associate III, Colorado State University, 0.58 academic person-months; 0.20 summer person-months (6.5% effort) in Year 02. Dr. Dooley is an environmental chemist with expertise in organic analytical methods including GC, GC/MS and LC/MS. He has collaborated with Dr. Reynolds on related studies, developing methods and performing GC/MS analyses for chemical markers of bacterial and fungi. He will have primary responsibility for GC/MSMS analyses in this study. He will also contribute to preparation of reports and publications.

Davidson, Margaret, Ph.D., Postdoctoral Fellow, Colorado State University, 6.63 calendar months (55.25% effort) in Year 02. He/she will work under the direct supervision of Dr. Reynolds and will assist with field and laboratory studies including sample collection, perform sample analyses, assist with creating analytic files and managing database(s), assist with statistical analyses and preparation of publications and reports.

Fringe rates are assessed at the rate of 24.4% in Year 02 for the PI, Co-Investigator, Research Associates, and the Postdoctoral Fellow.

Support for additional graduate students and postdoctoral students will be contributed by the Department of Environmental & Radiological Health Sciences and College of Veterinary Medicine and Biological Sciences to HICAHS for this project (See Institutional Support and Letters from ERHS and CVMBS).

Consultants ($5,000)

Elfman, Lena Ph.D. is an Associate Professor in the Department of Medical Sciences, Occupational and Environmental Medicine, Uppsala University, Uppsala University Hospital, Uppsala, Sweden. She will contribute expertise in sampling techniques in livestock environments, including allergen analysis and biological monitoring for inflammation markers in respiratory diseases in both workers and animals. She will also contribute to data analysis, manuscript and report preparation. Consultant support of $1,000 in Year 02 is being requested.

Kiryuchuk, Shelley Ph.D. is an Assistant Professor and Deputy Director of the Canadian Centre for Health and Safety in Agriculture, at the University of Saskatchewan, in Saskatoon, SK, Canada. She will be responsible for analyses for proteins and other components using mass spectroscopy and gel electrophoresis in a subset of samples. Support for the majority of analytical costs for Dr. Kiryuchuk’s work will be supported by the CCHSA. Consultant support of $2,000 in Year 02 is being requested.

Nonnenmann, Matthew Ph.D., CIH is an Assistant Professor and Deputy Director of the Southwest Center for Agricultural Health, Injury Prevention and Education at the University of Texas Health Science Center at Tyler Texas. Dr. Nonnenmann contributes experience in exposure assessment and ergonomics in agriculture. He teamed with Dr. Scot Dowd to publish the first study applying 4,5,4 Pyrosequencing to bioaerosol sampling in agricultural work settings, and is collaborating with Dr. Reynolds on further related studies. Dr. Reynolds is also serving as his Mentor on a KO1 award. Dr. Nonnenmann has played a key role in the Dairy Health and Safety Workshop in Denver, Colorado in October of 2009 co-hosted by HICAHS and the SouthWest Center. For this project he will contribute expertise in bioaerosols exposure assessment, particularly working with Drs. Reynolds and Dr. Dowd concerning Pyrosequencing analyses. He will also serve on the HICAHS Dairy Advisory Board. Consultant support of $2,000 in Year 02 is being requested.
Budget Justification (cont’d)

Drs. Elfman, Kirychuk, and Nonnenmann will also participate in the HICAHS International Dairy Research Consortium. This project and the other HICAHS Dairy projects will benefit from the collaboration with other agricultural research centers (nationally and internationally) regarding successful injury and illness prevention strategies, tested dissemination channels, and novel approaches used to improve the health and safety of dairy workers globally. Such leveraging of resources will augment dairy research efforts for HICAHS investigators and lead to research with greater impact regionally, nationally, and internationally.

**Supplies ($27,507)**
Sampling media including filters for high volume and personal inhalable samplers, and other supplies are required for collection of aerosol samples. Supplies for collection of nasal samples and venous blood are also required. Reagents, assay kits, pipettes, microtitre plates and other labware are required for endotoxin assays, and for cell studies. Funds for consumables, reagents, standards, etc. are also needed for: microbial analyses including molecular biological methods; recombinant Factor C (rFC) assays; 3-hydroxy fatty acids (3OHFA), muramic acid, and ergosterol analyses (GC/MSMS); and EAVES aerosol sampler cell studies including cytokine/chemokine assays.

Supplies for shipping of samples to Dr. Siegel at NIOSH, Dr. Hanson at RTL, and Dr. Poole at UNMC, are required. Funds for kits for cytokine testing by Dr. Siegel’s lab are also needed.

**Travel ($576)**
Travel (mileage) is required to collect samples at field sites. 16 trips are planned for Year 02. Sampling sites are anticipated to be an average of one hour drive from Colorado State University.

**Other Direct Costs ($6,100)**
Funds to reimburse participants for their time are requested ($50 each) in Year 02.

Funds are also needed for 4,5,4-pyrosequencing microbial analysis conducted by Dr. Hanson at RTL - ($3,800 in Year 02) and for irradiation of dust samples conducted by Dr. Thomas Johnson at CSU - ($600 in Year 02).

Photocopying: Field notes, laboratory notes and results, consent forms, and chains of custody and shipping forms will need to be duplicated. Questionnaires need to be printed. Postage/shipping of samples to Dr. Siegel at NIOSH, Dr. Dowd at RTL, and Dr. Poole at UNMC, are required, in addition to other communications requiring postage. We also anticipate other costs associated with long distance phone and video-conferencing to effectively manage and coordinate this project.

**Consortium Costs ($20,000)**
Jill Poole, MD, is an Assistant Professor of Medicine at the University of Nebraska Medical Center. She is an allergist and immunologist currently investigating the innate immune responses of lung monocytes, macrophages, dendritic cells, and epithelial cells in occupational COPD. This has been her focus for approximately five years with funding from the National Institute of Environmental Health Sciences, and she has published several manuscripts reflecting this research. She has collaborated with Dr. Reynolds and his team on this work. For this proposal, her primary responsibility will be to conduct human airway epithelial cell culture assays for inflammatory mediator production and interpret pulmonary function testing performed on workers.

**Consortium Indirect Costs ($9,700)**
Indirect rates are calculated at 48.5% MTDC in Year 02.

**Indirect Costs ($123,246)**
Indirect rates are calculated at 48.5% MTDC in Year 02.
PROGRESS REPORT SUMMARY

PROGRAM DIRECTOR / PRINCIPAL INVESTIGATOR
Stephen J. Reynolds

GRANT NUMBER
2U54OH008085-08

PERIOD COVERED BY THIS REPORT
FROM 09/15/2011 THROUGH 09/14/2012

APPLICANT ORGANIZATION
High Plains Intermountain Center for Agricultural Health and Safety - HICAHS

TITLE OF PROJECT (Repeat title shown in Item 1 on first page)
Bioaerosol Exposures and Models of Human Response in Dairies and Cattle Feedlots (RP1)

A. Human Subjects (Complete Item 6 on the Face Page)

Involvement of Human Subjects
☐ No Change Since Previous Submission ☐ Change

B. Vertebrate Animals (Complete Item 7 on the Face Page)

Use of Vertebrate Animals
☐ No Change Since Previous Submission ☐ Change

C. Select Agent Research
☐ No Change Since Previous Submission ☐ Change

D. Multiple PD/PI Leadership Plan
☐ No Change Since Previous Submission ☐ Change

E. Human Embryonic Stem Cell Line(s) Used
☐ No Change Since Previous Submission ☐ Change

SEE PHS 2590 INSTRUCTIONS.

WOMEN AND MINORITY INCLUSION: See PHS 398 Instructions. Use Inclusion Enrolment Report Format Page and, if necessary, Targeted/Planned Enrolment Format Page.

A. Specific Aims

No aims have been modified

Aim 1: Characterize the biologically active constituents of agricultural aerosols in two envoirments (cattle feedlot, dairy) over four seasons, focusing on Gram-positive bacteria and muramid acid.

Aim 2: Evaluate the performance of a novel aerosol sampler (incorporating normal human bronchial epithelial cells) in comparison to a traditional in vitro model of bioaerosol toxicity in the lung (incorporating the same cells grown in a submerged culture).

Aim 3: Evaluate the relevance of the aerosol sampler and submerged cell culture model to human health (immune response and cross-shift pulmonary function).

B. Studies and Results

All project activities have been initiated and are ongoing. Analytical methods for bioaerosol and biological samples are being finalized, and Standard Operating Procedures (SOPs) developed for each project activity. Human subjects approval was obtained and will be updated before collection of data from workers to begin in Year 02.

Aim 1: A high volume, IESL 3 stage cloud impactor has been obtained and modified to sample 4 particle cutpoints of airborne particles (<2.5um, 4um, 10um and 30um). The sampler draws 1500 litres of air a minute and will significantly increase sample collection ensuring sufficient mass for the proposed analyses. The proposed biosamplers and materials for collection and analysis of bioaerosols have been obtained and pilot testing has been conducted. All project staff have undertaken pertinent OH&S training, and we are finalizing training in relation to the operation of sample collection devices and analytical methods. Two dairy venues have been recruited, and two cattle feedlots will be recruited before June 2012. The first field sampling trial is scheduled for May 3 2012, with seasonal sampling following as proposed.
Aim 2: Method development for this aim has been initiated in this first year. Data collection and analysis will begin in Year 02 as proposed. The novel aerosol sampler (Eaves Chamber) is currently being tested with defined aerosols, and will be challenged with dairy dust that is to be collected during the field trial in May 3, 2012. Methods for the growth of submerged cultured BEAS-2B cells for the in-vitro trials have been developed, along with a protocol for the extraction of dust samples for exposure challenges. Protocols for analysis of inflammatory cytokines (IL6, IL8 and TNF-alpha) by Real Time Polymerase Chain Reaction (RT PCR) and Enzyme Linked Immunoassay (ELISA) have been established. Preliminary data for cytokine release from BEAS-2B cells exposed to dairy dust was comparable to results for the same dust analyzed by Dr. Poole's laboratory (over 20 years' experience with in-vitro cell culture research).

Aim 3: Method development for this aim has been initiated in this first year. Data collection and analysis will begin in Year 02 as proposed. Methods for the collection of nasal samples by Rhinoprobe and subsequent extraction and analysis by RT-PCR and ELIZA) are under development and will be used to evaluate worker immune response in relation to bioaerosol exposure. Cross-shift pulmonary function and blood sampling protocols are currently being revised and updated. Pre- and Post-shift questionnaires are also being revised and will be submitted for human subjects review and approval before September 2012.

C. Significance
Research into respiratory disease and exposures in agricultural settings has focused primarily on Gram negative bacterial endotoxins. Although endotoxins are important, they may explain only a small proportion of respiratory disease currently seen in agricultural workers, even after consideration of genetic factors. Recent application of new molecular biology techniques has shown that bioaerosols in swine, dairy, and poultry environments are dominated by an incredibly diverse population of Gram-positive bacteria. We have demonstrated that large-animal farming environments contain high levels of muramic acid, a marker of Gram-positive bacteria, and that depletion of endotoxin from these dusts resulted in significant retention of inflammatory potential in vitro. These types of cell studies have traditionally used settled dusts and dust extracts, not aerosols. Improved characterization of agricultural aerosols is needed to explain the etiology of respiratory diseases in these environments and to develop interventions that effectively reduce exposures.

D. Plans
Recruit an additional two venues (feedlots) to bring total to four venues (Aim 1 and Aim 3), collect seasonal bioaerosol data starting May 2012 (Aim 1). Finalize all standard operating procedures for the Rhino probe sampling, pulmonary function testing, pre- and post-questionnaires. Obtain updated IRB approval before initiating worker sampling for Aim 3 in Year 02. Complete all method development for novel aerosol chamber (Eaves Chamber), and initiate comparative study of the novel versus in-vitro immune response assays in Year 02 (Aim 2).

E. Publications


Presentations/Conferences

and work-related behaviors: pulmonary function deficits among potentially susceptible subgroups of agricultural workers in Colorado and Nebraska. ISEE, September 2011b.


F. Project Generated Resources

Standard Operating Procedure: IESL Impactor
Standard Operating Procedure: Bioaerosol Sampling and Analysis
# Inclusion Enrollment Report

This report format should NOT be used for data collection from study participants.

<table>
<thead>
<tr>
<th>Study Title:</th>
<th>Bioaerosol Exposures and Models of Human Response in Dairies and Cattle Feedlots</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Enrollment:</td>
<td>128</td>
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<tr>
<td>Grant Number:</td>
<td>2U54OH008085-08</td>
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</table>

## PART A. TOTAL ENROLLMENT REPORT: Number of Subjects Enrolled to Date (Cumulative) by Ethnicity and Race

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<thead>
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<th>Ethnic Category</th>
<th>Females</th>
<th>Males</th>
<th>Sex/Gender Unknown or Not Reported</th>
<th>Total</th>
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<td>0</td>
<td>0</td>
<td>0 **</td>
</tr>
<tr>
<td>Not Hispanic or Latino</td>
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<td>Unknown (individuals not reporting ethnicity)</td>
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**Ethnic Category: Total of All Subjects**

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**Racial Categories: Total of All Subjects**

## PART B. HISPANIC ENROLLMENT REPORT: Number of Hispanics or Latinos Enrolled to Date (Cumulative)

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<td>Native Hawaiian or Other Pacific Islander</td>
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<td>Black or African American</td>
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**Racial Categories: Total of Hispanics or Latinos**

---

* These totals must agree.
** These totals must agree.
NOTICE OF APPROVAL FOR HUMAN RESEARCH

DATE: October 13, 2011
TO: Reynolds, Stephen, Environmental & Radiologic Health
    Mehaffy, John, Environmental & Radiologic Health, Volckens, John, Nickoloff, Jac, Environmental & Radiologic Health,
    Keefe, Thomas, 1681 Env & Rad Health Sciences
FROM: Barker, Janell, CSU IRB 1
PROTOCOL TITLE: Bioaerosol Exposures and Models of Human Response in Dairies and Cattle Feedlots
FUNDING SOURCE: Centers for Disease Control: 102729
PROTOCOL NUMBER: 11-2847H
APPROVAL PERIOD: Approval Date: October 12, 2011 Expiration Date: August 03, 2012

The CSU Institutional Review Board (IRB) for the protection of human subjects has reviewed the protocol entitled: Bioaerosol Exposures and Models of Human Response in Dairies and Cattle Feedlots. The project has been approved for the procedures and subjects described in the protocol. This protocol must be reviewed for renewal on a yearly basis for as long as the research remains active. Should the protocol not be renewed before expiration, all activities must cease until the protocol has been re-reviewed.

If approval did not accompany a proposal when it was submitted to a sponsor, it is the PI's responsibility to provide the sponsor with the approval notice.

This approval is issued under Colorado State University's Federal Wide Assurance 00000647 with the Office for Human Research Protections (OHRP). If you have any questions regarding your obligations under CSU's Assurance, please do not hesitate to contact us.

Please direct any questions about the IRB's actions on this project to:

Janell Barker, Senior IRB Coordinator - (970) 491-1655 Janell.Barker@Colostate.edu
Evelyn Swiss, IRB Coordinator - (970) 491-1381 Evelyn.Swiss@Colostate.edu

Barker, Janell

Barker, Janell

Includes:

Approval is for 128 participants from various feedlots and dairies. Recruitment should not occur until after a letter of cooperation is obtained and submitted to the IRB. The approved consent form must be used to obtain consent. Approval is given with the following conditions: submit the Spanish
consent form once translated; submit the final questionnaire once available; submit a detailed list of the medications to exclude participants; submit the verbal recruitment to recruit the participants; and submit the letters of cooperations from the dairies and feedlots not already submitted. Submit these changes as an Amendment and upload the necessary documentation.

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<th>Approval Period:</th>
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<td>Funding:</td>
<td>Centers for Disease Control: 102729</td>
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1. PROGRAM INCOME (See instructions.)
All applications must indicate whether program income is anticipated during the period(s) for which grant support is requested. If program income is anticipated, use the format below to reflect the amount and source(s).

<table>
<thead>
<tr>
<th>Budget Period</th>
<th>Anticipated Amount</th>
<th>Source(s)</th>
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2. ASSURANCES/CERTIFICATIONS (See instructions.)
In signing the application Face Page, the authorized organizational representative agrees to comply with the policies, assurances and/or certifications listed in the application instructions when applicable. Descriptions of individual assurances/certifications are provided in Part III of the PHS 398, and listed in Part I, 4.1 under Item 14. If unable to certify compliance, where applicable, provide an explanation and place it after the Progress Report (Form Page 5).

3. FACILITIES AND ADMINISTRATIVE (F&A) COSTS
Indicate the applicant organization’s most recent F&A cost rate established with the appropriate DHHS Regional Office, or, in the case of for-profit organizations, the rate established with the appropriate PHS Agency Cost Advisory Office.

☐ No DHHS Agreement, but rate established with ___________________________ Date ________________

CALCULATION*

Entire proposed budget period: Amount of base $ 254,116 x Rate applied 48.5% = F&A costs $ 123,246

Add to total direct costs from Form Page 2 and enter new total on Face Page, Item 8b.

*Check appropriate box(es):
☐ Salary and wages base ☒ Modified total direct cost base ☐ Other base *(Explain)*
☐ Off-site, other special rate, or more than one rate involved *(Explain)*

Explanation *(Attach separate sheet, if necessary):*
## Detailed Budget for Next Budget Period - Direct Costs Only

**List Personnel (Applicant organization only)**

Use Cal. Acad. or Summer to Enter Months Devoted to Project

Enter Dollar Amounts Requested (omit cents) for Salary Requested and Fringe Benefits

<table>
<thead>
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<th>Name</th>
<th>Role on Project</th>
<th>Cal. Mths</th>
<th>Acad. Mths</th>
<th>Summer Mths</th>
<th>Salary Requested</th>
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**Subtotals**

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<td>28,828</td>
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**Consultant Costs**

**Equipment** *(Itemize)*

**Supplies** *(Itemize by category)*

**Travel**

Travel to Dairy site visits for data collection for PI and GRA

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<tr>
<th>Price</th>
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<td>6,000</td>
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**Inpatient Care Costs**

**Outpatient Care Costs**

**Alterations and Renovations** *(Itemize by category)*

**Other Expenses** *(Itemize by category)*

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<td>Subtotal Direct Costs for Next Budget Period</td>
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**Consortium/Contractual Costs**

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<td>Facilities and Administrative Costs</td>
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**Total Direct Costs for Next Budget Period** *(Item 8a, Face Page)*

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<td></td>
<td>$170,768</td>
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Program Director/Principal Investigator (Last, First, Middle): Reynolds, Stephen J.

BUDGET JUSTIFICATION

Provide a detailed budget justification for those line items and amounts that represent a significant change from that previously recommended. Use continuation pages if necessary.

**Personnel ($33,560)**

Rosecrance, John, Ph.D., Principal Investigator, Colorado State University, 0.63 academic person-months, 0.21 summer person-months (7% effort) in Year 02. Dr. Rosecrance has had extensive experience in data acquisition related to ergonomics exposure assessment in field studies. He will serve as Co-Investigator with Dr. David Douphraste (University of Texas sub-contract) and will be involved in all facets of the study including supervision of the GRA, subject recruitment, data collection and management, data analysis and preparation of presentations, reports and manuscripts. He will facilitate data collection in Utah, Colorado, and South Dakota.

Tellechea, Teresa, Ph.D., Co-Investigator, Colorado State University, 1.08 academic person-months, 0.36 summer person-months (12% effort) in Year 02. Dr. Tellechea is a cultural / medical anthropologist with more than 10 years of experience working with Latino populations on cultural appropriateness of interventions, training, and community involvement. Dr. Tellechea adds significant value to this project with her knowledge of the target population, overcoming cultural barriers to adoption of interventions and she is fluent in Spanish and English languages. Dr. Tellechea work with Drs. Rosecrance and Douphraste by providing recommendations for working with the target population of Latinos, assisting in translation of language and identifying cultural barriers to intervention dissemination and adoption.

(continued)

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<thead>
<tr>
<th>CURRENT BUDGET PERIOD</th>
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<th>THROUGH</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>09/15/2011</td>
<td>09/14/2012</td>
</tr>
</tbody>
</table>

Explain any estimated unobligated balance (including prior year carryover) that is greater than 25% of the current year's total budget.
To-Be-Named, Graduate Research Assistant, 3.0 calendar months (25% effort) in Year 02. The GRA will assist in all aspects of the data collection including the methods (electromyography, acceleration, joint displacement, motion capture systems) and analysis procedures that will be used in this study. The GRA will also assist in the translation for Spanish speaking participants.

Fringe rates are assessed at the rate of 24.4% in Year 02 for the PI and Co-Investigators; 3.5% in Year 02 for the GRA.

**Travel** ($6,000)
Travel support is requested for Drs. Rosecrance and Tellechea and the GRA to travel to data collection sites in Colorado, Texas, Utah, and South Dakota.

**Consortium Costs** ($87,472)
We will have a sub-contract with Dr. David Doupurate at the University of Texas, School of Public Health to conduct and manage the majority of data collection for this study. This sub-contract is as outlined in the original 5-year proposal submission.

**Consortium Indirect Costs** ($43,736)
Indirect rates are calculated at 50% MTDC for Year 02.

**Indirect Costs** ($19,187)
Indirect rates are calculated at 48.5% MTDC in Year 02.
PROGRESS REPORT SUMMARY

PROGRAM DIRECTOR / PRINCIPAL INVESTIGATOR
John Rosecrance - CSU/David Douphrate - UTHSCH

PERIOD COVERED BY THIS REPORT
FROM 09/15/2011 THROUGH 09/14/2012

APPLICANT ORGANIZATION
High Plains Intermountain Center for Agricultural Health and Safety - HICAHS

TITLE OF PROJECT (Repeat title shown in Item 1 on first page)
Exposure Assessment and Intervention Analysis in Industrialized Dairy Parlors (PP2)

A. Human Subjects (Complete Item 6 on the Face Page)
   - Involvement of Human Subjects: ☑ No Change Since Previous Submission. ☐ Change

B. Vertebrate Animals (Complete Item 7 on the Face Page)
   - Use of Vertebrate Animals: ☑ No Change Since Previous Submission. ☐ Change

C. Select Agent Research
   - No Change Since Previous Submission. ☐ Change

D. Multiple PD/Ph Leadership Plan
   - No Change Since Previous Submission. ☐ Change

E. Human Embryonic Stem Cell Line(s) Used
   - No Change Since Previous Submission. ☐ Change

SEE PHS 2590 INSTRUCTIONS.

WOMEN AND MINORITY INCLUSION: See PHS 398 Instructions. Use Inclusion Enrollment Report Format Page and, if necessary, Targeted/Planned Enrollment Format Page.

A. Specific Aims

Aim 1: Quantify and compare full shift physical workloads (motion, posture, and muscle force) of the upper extremity and cardiovascular workloads among workers performing milking tasks in three industrial parlor configurations. Status: ongoing without modifications

Aim 2: Determine an optimum parlor pit height which minimizes physical exposures (postures and muscle activity) of the upper extremity and trunk among workers performing milking tasks in large herd parlors. Status: ongoing without modifications

Aim 3: Evaluate the effect of an ergonomic intervention (lightweight milking cluster) on muscle activity of selected upper extremity muscle groups. Status: ongoing without modifications

Aim 4: Evaluate the effect on an ergonomic intervention (teat stripping and sanitization tool) on muscle activity of selected upper extremity muscle groups. Status: ongoing without modifications

Aim 5: Based on findings from Specific Aims 1-4, develop recommendations and strategies for dairy producers which address parlor design, milking tools and worker productivity. Status: ongoing without modifications

B. Studies and Results

Human Subjects approval has been applied for and granted for the project. All data collection equipment has been purchased. Data collection has begun. No results have been generated to date.

C. Significance

Large-hed dairy workers remain a vastly understudied population, and limited research has addressed intervention efforts leading to the reduction of unintentional injuries in this vulnerable working group. Dairy production in the US is steadily moving toward large-hed industrialized operations due to associated economies of scale. The relatively recent shift toward industrialized dairy production has led to increased
risk of work-related musculoskeletal disorders (MSD) among workers due to task specialization and greater work demands. As the trend toward larger herd sizes continues, the need for effective health and safety intervention research in the dairy industry will become even more significant.

D. Plans
Data collection activities will continue. Researchers are working closely with State Dairy Extension Specialists to identify prospective dairies for inclusion in the study. Data collection trips have been scheduled in New Mexico, Colorado and South Dakota for the summer of 2012 to address Specific Aim 1. Plans are underway to begin data collection for Specific Aims 2-5.
# Inclusion Enrollment Report

This report format should NOT be used for data collection from study participants.

**Study Title:** Exposure Assessment and Intervention Analysis in Industrialized Dairy Parlors  
**Total Enrollment:** 236  
**Grant Number:** 2U54OH008085-08  
**Protocol Number:** 11-2954H

## PART A. TOTAL ENROLLMENT REPORT: Number of Subjects Enrolled to Date (Cumulative)

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## PART B. HISPANIC ENROLLMENT REPORT: Number of Hispanics or Latinos Enrolled to Date (Cumulative)

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<td>5 **</td>
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* These totals must agree.  
** These totals must agree.
NOTICE OF APPROVAL FOR HUMAN RESEARCH

DATE: October 13, 2011
TO: Rosencrance, John, 1681 Env & Rad Health Sciences
    Mixco, Anthony, 1681 Env & Rad Health Sciences, Nickoloff, Jac, 1681 Env & Rad Health Sciences
FROM: Barker, Janell, , CSU IRB 1
PROTOCOL TITLE: Exposure Assessment and Intervention Analysis in Industrialized Dairy Parlors
FUNDING SOURCE: Centers for Disease Control : 103069
PROTOCOL NUMBER: 11-2954H
APPROVAL PERIOD: Approval Date: October 07, 2011 Expiration Date: September 15, 2012

The CSU Institutional Review Board (IRB) for the protection of human subjects has reviewed the protocol entitled: Exposure Assessment and Intervention Analysis in Industrialized Dairy Parlors. The project has been approved for the procedures and subjects described in the protocol. This protocol must be reviewed for renewal on a yearly basis for as long as the research remains active. Should the protocol not be renewed before expiration, all activities must cease until the protocol has been re-reviewed.

If approval did not accompany a proposal when it was submitted to a sponsor, it is the PI's responsibility to provide the sponsor with the approval notice.

This approval is issued under Colorado State University's Federal Wide Assurance 00000647 with the Office for Human Research Protections (OHRP). If you have any questions regarding your obligations under CSU's Assurance, please do not hesitate to contact us.

Please direct any questions about the IRB's actions on this project to:

Janell Barker, Senior IRB Coordinator - (970) 491-1655 Janell.Barker@Colostate.edu
Evelyn Swiss, IRB Coordinator - (970) 491-1381 Evelyn.Swiss@Colostate.edu

Barker, Janell

Includes:

Approval is for 236 dairy workers using the approved consent in English or Spanish with the following conditions: the Spanish consent must be submitted as an Amendment prior to use, the letters of cooperations must be obtained prior to recruitment and submitted as an Amendment.
Review Type: EXPEDITED
IRB Number: 00000202
Funding: Centers for Disease Control : 103069
NOTICE OF CONTINUING REVIEW APPROVAL

HSC-SPH-11-0361 - Exposure Assessment and Intervention Analysis in Industrialized Dairy Parlors

PI: David Douphrate

PROVISOS: Unless otherwise noted, this approval relates to the research to be conducted under the above referenced title and/or to any associated materials considered at this meeting, e.g. study documents, informed consents, etc.

NOTE: If this study meets the federal registration requirements and this is an investigator-initiated study, or if the PI is the study sponsor or holds the IND/IDE applicable to this study, and no one else has registered this trial on the national registry, you are required to register this trial on the national registry at www.clinicaltrials.gov in order to publish results in any of the key peer-reviewed journals. For further information write to clinicaltrials@uth.tmc.edu or call 713-500-7909.

APPROVED: By Expedited Review and Approval

REVIEW DATE: April 20, 2012

APPROVAL DATE: April 20, 2012 EXPIRATION DATE: 03/31/2013

CHAIRPERSON: L. Maximilian Buja, MD

Upon review, the CPHS finds that this research is being conducted in accord with its guidelines and with the methods agreed upon by the principal investigator (PI) and approved by the Committee. This approval, subject to any listed provisions and contingent upon compliance with the following stipulations, will expire as noted above:

CHANGES: The PI must receive approval from the CPHS before initiating any changes, including those required by the sponsor, which would affect human subjects, e.g. changes in methods or procedures, numbers or kinds of human subjects, or revisions to the informed consent document or procedures. The addition of co-investigators must also receive approval from the CPHS. ALL PROTOCOL REVISIONS MUST BE SUBMITTED TO THE SPONSOR OF THE RESEARCH.

INFORMED CONSENT: Informed consent must be obtained by the PI or designee(s), using the format and procedures approved by the CPHS. The PI is responsible to instruct the designee in the methods approved by the CPHS for the consent process. The individual obtaining informed consent must also sign the consent document. Attached is the approved and validated informed consent form. You must discard all previous informed consent documents being used and
replace them with this stamped validated version. Please note that only copies of the appropriately dated, stamped approved informed consent form can be used when obtaining consent.

UNANTICIPATED RISK OR HARM, OR ADVERSE DRUG REACTIONS: The PI will immediately inform the CPHS of any unanticipated problems involving risks to subjects or others, of any serious harm to subjects, and of any adverse drug reactions.

RECORDS: The PI will maintain adequate records, including signed consent documents if required, in a manner which ensures subject confidentiality.
1. PROGRAM INCOME (See instructions.)
All applications must indicate whether program income is anticipated during the period(s) for which grant support is requested. If program income is anticipated, use the format below to reflect the amount and source(s).

<table>
<thead>
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2. ASSURANCES/CERTIFICATIONS (See instructions.)
In signing the application Face Page, the authorized organizational representative agrees to comply with the policies, assurances and/or certifications listed in the application instructions when applicable. Descriptions of individual assurances/certifications are provided in Part III of the PHS 398, and listed in Part I, 4.1 under item 14. If unable to certify compliance, where applicable, provide an explanation and place it after the Progress Report (Form Page 5).

3. FACILITIES AND ADMINISTRATIVE (F&A) COSTS
Indicate the applicant organization's most recent F&A cost rate established with the appropriate DHHS Regional Office, or, in the case of for-profit organizations, the rate established with the appropriate PHS Agency Cost Advisory Office.

☐ DHHS Agreement dated: 06/28/2011
☐ No Facilities and Administrative Costs Requested.
☐ No DHHS Agreement, but rate established with __________________________ Date ________________

CALCULATION*

Entire proposed budget period: Amount of base $39,560 x Rate applied 48.5% = F&A costs $19,187

Add to total direct costs from Form Page 2 and enter new total on Face Page, Item 8b.

*Check appropriate box(es):

☐ Salary and wages base
☐ Modified total direct cost base
☐ Other base (Explain)

☐ Off-site, other special rate, or more than one rate involved (Explain)

Explanation (Attach separate sheet, if necessary):
<table>
<thead>
<tr>
<th>NAME</th>
<th>ROLE ON PROJECT</th>
<th>Cal. Mths</th>
<th>Acad. Mths</th>
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<th>TOTALS</th>
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**SUBTOTALS**

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**CONSULTANT COSTS**

**EQUIPMENT (Itemize)**

**SUPPLIES (Itemize by category)**

Computer supplies

**TRAVEL**

Attend ASABE and ISO ROPS Committee meetings

3,500

**INPATIENT CARE COSTS**

**OUTPATIENT CARE COSTS**

**ALTERATIONS AND RENOVATIONS (Itemize by category)**

**OTHER EXPENSES (Itemize by category)**

Tuition for GRA (3 semesters)

5,280

**SUBTOTAL DIRECT COSTS FOR NEXT BUDGET PERIOD**

$65,000

**CONSORTIUM/CONTRACTUAL COSTS**

DIRECT COSTS

**CONSORTIUM/CONTRACTUAL COSTS**

FACILITIES AND ADMINISTRATIVE COSTS

**TOTAL DIRECT COSTS FOR NEXT BUDGET PERIOD (Item 8a, Face Page)**

$65,000
Provide a detailed budget justification for those line items and amounts that represent a significant change from that previously recommended. Use continuation pages if necessary.

**Personnel** - ($54,220)

Ayers, Paul D., Ph.D., Principle Investigator, 2.25 calendar months (18.8% effort) in Year 02. Dr. Ayers is the supervisor of the project and is responsible for completing the objectives and submitting the final reports. Dr. Ayers effort has increased 2% for Year 02 due to a reduction in budget in Year 01. An increase in effort is necessary to keep this project on time.

Wade, Daniel, Graduate Research Assistant, 6.0 calendar months (50% effort) in Year 02. Mr. Wade will be responsible for conducting the model development, evaluation, and ROPS testing.

To-Be-Named, Student Hourly, 1.5 calendar months (260 hours - 12.5% effort) in Year 02. He/she will assist the GRA with model development, evaluation, and ROPS testing.

Fringe rates are assessed at 28% for the Principle Investigator in Year 02; 10% for the Graduate Research Assistant in Year 02; 0% for the Student hourly in Year 02.

**Supplies** - ($2,000)

Supplies are needed to 1) develop and evaluate the computer model and 2) prepare and conduct ROPS tests.

(continued)

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<th>THROUGH</th>
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Explain any estimated unobligated balance (including prior year carryover) that is greater than 25% of the current year’s total budget. N/A
Program Director/Principal Investigator (Last, First, Middle): Reynolds, Stephen J.
PP3 - Ayers (UTENN)

Budget Justification (cont’d)

**Travel ($3,500)**
Travel for the PI and the GRA to attend ASABE and ISO ROPS Committee meetings.

**Other Direct Costs ($5,280)**
Other costs include tuition for the GRA.

**Indirect Costs (23,888)**
Indirect rates are calculated at 40% MTDC in Year 02.
A. Specific Aims

Aim 1: Conduct preliminary investigation for background on ROPS design model approaches and develop a database of tractor ROPS dimensions. Understanding appropriate and acceptable current ROPS dimensions and construction details are required for a usable ROPS design program. Status: Initiated and ongoing.

Aim 2: Conduct a review of ROPS force-deflection analytical predictions and ROPS performance requirement standards. Both Finite element and elasto-plastic modeling have been used for evaluating ROPS structural performance. Acceptable ROPS standards (SAE J2194 and OSHA 1828.52) are needed to meet Federal regulations. Status: Initiated and ongoing.

Aim 3: Develop ROPS design model utilizing governing equation integration, verification and sensitivity analysis techniques. This includes the selection of computer model format and structure accessible by ROPS manufactures. The computer model interfaces with the input and output files also require easily accessible information. Status: In initial development.

Aim 4: Conduct testing and validation of the ROPS design output. This includes three -step validation process. Initial validation would involve comparison of the computer based ROPS designs for 10 tractors to the ROPS dimension inventory previously generated. Laboratory ROPS performed testing will be conducted in accordance with the SAE J2194 for ROPS design for 3 tractor models. Finally computer based ROPS design program validation will involve ROPS constructed by one commercial ROPS manufacture and 2 local custom fabricators. Status: Future work.

Aim 5: Develop and release the final computer based ROPS design program product. This includes CD with program, final documentation and guidelines manual. Status: Future work.

The aims of this project have not been modified.
B. Studies and Results

Initial ROPS Standards reviews have been conducted. Based on the reviews, SAE J2194 and SAE J1194 are deemed the appropriate ROPS standards to develop the CRDP. They are both approved by OSHA and are widely accepted in industry. Based on ASABE PM23/2/2 ROPS Committee discussion (February AETC meeting in Louisville, KY), the ASABE S478 ROPS standard is not approved by OSHA, and is under consideration for withdrawal. A subcommittee has been formed to evaluate the utility of ASABE S478. Both OECD and ISO ROPS standards are still being considered, and further information is needed. At this point OECD ROPS Standards 3, 4, 6, 7, and 8 appear relevant. Additional information will be acquired at the ROPS discussion panel at the ISASH meeting in Burlington, VT (June 2012), and ASABE ROPS Committee meeting at the July 2012 ASABE meeting in Dallas, TX. Additional ISO and OECD meetings attendance is being considered.

The zonecheck model for determining ROPS performance exposure and intrusion criteria has been reprogrammed into MatLab and model verification is being conducted. Additional inventory data for tractors for which ROPS are not available has been gathered. The process of determining post-ROPS tractors is ongoing.

The required inputs and outputs for the CRDP have been established. These are shown in the attached figures. The model input parameters were organized into a form and tested at the 2012 National Agricultural Machinery show in Louisville, KY. Model parameter inputs were determined for 6 tractors. In addition, ROPS dimensions were acquired utilizing the developed ROPS output CAD drawing (see attached). This drawing not only is used to obtain existing ROPS dimensions, but will also be the output of the CRDP.

Preliminary ROPS design relationships have been observed and are being further investigated as described below:

- ROPS thickness and box dimensions increase with tractor weight, but thicknesses are less sensitive.
- ROPS heights increase with distance of the seat reference point (SRP) above the axle housing.
- ROPS slant angle increase with horizontal distance of the (SRP) behind the axle housing mount.

These are obvious trends, but the mathematical relationships are being developed.

The elasto-plastic model utilized in the ESTREMA ROPS design model was investigated. The model is only applicable for a 4-post ROPS design and cannot be used directly for the CRDP. However the governing equations are still useful.

C. Significance

The initial framework and platform for the CRDP has been established (MS Excel/AutoCAD). This includes defining model inputs and outputs, development of ROPS CAD drawing format, and the protocol development and acquisition of preliminary tractor and ROPS data. Based on the initial results and products, substantial progress has been made for the development of this intervention product.

D. Plans

The proposed action items for the end of Year 1 and Year 2 focus on:

1) Continued acquisition of tractor and ROPS dimensions at local Tractor dealers,
2) Definition of relationships between tractor and ROPS dimensions,
3) Presentation of findings at ASABE, ISASH and OECD/ISO meetings,
4) Finalizing the CRDP framework and conducting the model verification and validation process, and
5) Finalizing the inventory for post-ROPS tractors without available ROPS designs.
6) Presentations based on the project are scheduled for the June 2012 ISASH and July 2012 ASABE conferences.
CHECKLIST

1. PROGRAM INCOME (See instructions.)
All applications must indicate whether program income is anticipated during the period(s) for which grant support is requested. If program income is anticipated, use the format below to reflect the amount and source(s).

<table>
<thead>
<tr>
<th>Budget Period</th>
<th>Anticipated Amount</th>
<th>Source(s)</th>
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3. FACILITIES AND ADMINISTRATIVE (F&A) COSTS
Indicate the applicant organization's most recent F&A cost rate established with the appropriate DHHS Regional Office, or, in the case of for-profit organizations, the rate established with the appropriate PHS Agency Cost Advisory Office.

☐ DHHS Agreement dated: 01/26/2012  ☐ No Facilities and Administrative Costs Requested.

☐ No DHHS Agreement, but rate established with ____________________________ Date ____________________________

CALCULATION*

Entire proposed budget period: Amount of base $59,720 x Rate applied 40% = F&A costs $23,888

Add to total direct costs from Form Page 2 and enter new total on Face Page, Item 8b.

*Check appropriate box(es):
☐ Salary and wages base  ☐ Modified total direct cost base  ☐ Other base (Explain)
☐ Off-site, other special rate, or more than one rate involved (Explain)

Explanation (Attach separate sheet, if necessary):
**DETAILED BUDGET FOR NEXT BUDGET PERIOD - DIRECT COSTS ONLY**

**FROM** 09/15/2012  **THROUGH** 09/14/2013  **GRANT NUMBER** 5U54OH008085-09

**List PERSONNEL (Applicant organization only)**

Use Cal. Acad, or Summer to Enter Months Devoted to Project

Enter Dollar Amounts Requested (omit cents) for Salary Requested and Fringe Benefits

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<th>NAME</th>
<th>ROLE ON PROJECT</th>
<th>Cal. Mnths</th>
<th>Acad. Mnths</th>
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**SUBTOTALS**

|                              | 99,597 | 22,000 | 121,597 |

**CONSULTANT COSTS**

**EQUIPMENT (Itemize)**

**SUPPLIES (Itemize by category)**

Supplies for focus group meetings; Computer storage/accessories

**TRAVEL**

Travel to Dairy sites in Colorado, Utah, Texas, and New Mexico; National/Regional scientific and producer agricultural dairy meetings - $6,389; Travel to International Dairy Research Consortium by PI - $3,500

**INPATIENT CARE COSTS**

**OUTPATIENT CARE COSTS**

**ALTERATIONS AND RENOVATIONS (Itemize by category)**

**OTHER EXPENSES (Itemize by category)**

Participant incentives - $8,800; Sponsored Functions with dairy partners - $1,000; Long distance telephone and video-conferencing - $200

**SUBTOTAL DIRECT COSTS FOR NEXT BUDGET PERIOD**

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**CONSORTIUM/CONTRACTUAL COSTS**

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**TOTAL DIRECT COSTS FOR NEXT BUDGET PERIOD (Item 8a, Face Page)**

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</thead>
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</tbody>
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BUDGET JUSTIFICATION

Provide a detailed budget justification for those line items and amounts that represent a significant change from that previously recommended. Use continuation pages if necessary.

**Personnel ($121,597)**

Rosecrance, John, Ph.D., Principal Investigator, Colorado State University, 1.80 academic person-months, 0.60 summer person-months (20% effort) in Year 02. As the PI of the proposed project Dr. Rosecrance will work closely with and communicate frequently (daily to monthly) with members of his highly qualified research team. Dr. Rosecrance will be responsible for all aspects of the proposed study including the supervision of the post-doc and graduate students, conduct of all methods and procedures, communication with community partners and NIOSH, administrating focus groups, and obtaining all objectives and goals in a timely manner. Additionally, he will be responsible for producing articles for scientific and trade publications and annual reports and budgets.

Roman-Muniz, Noa, Ph.D., Co-Investigator, Colorado State University, 0.09 academic person-months, 0.03 summer person-months (1% effort) in Year 02. Dr. Roman-Muniz will work with Dr. Rosecrance and the research team to successfully conduct the proposed study. She will provide assistance with training curriculum development.

Tellechea, Teresa, Ph.D., Colorado State University, 7.47 academic person-months, 2.49 summer person-months, (83% effort) in Year 02. Dr. Tellechea been added to Key Personnel as the project director. She will work with Dr. Rosecrance on all aspects of the daily conduct of the study, including recruitment of partners, data collection, written reports, publications, training, leading focus groups, and providing specialized assistance in the area of cultural appropriateness, qualitative measures, translation of materials, culturally targeted dissemination.

**CURRENT BUDGET PERIOD**

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Explain any estimated unobligated balance (including prior year carryover) that is greater than 25% of the current year's total budget.

N/A
Budget Justification (cont'd)

To-Be-Named, Graduate Research Assistant, Colorado State University, 3 calendar months (25% effort) in Year 02. The GRA will assist Dr. Rosecrance and the postdoc with tasks such as transcription, note taking, data entry, and general office work.

Fringe rates are assessed at the rate of 24.4% in Year 02 for the PI and Co-Investigator; 3.5% in Year 02 for the Graduate Research Assistant.

Supplies ($1,400)
Supplies will be used to conduct focus group meetings; computer storage and accessories.

Travel - Domestic ($6,389)
Travel is needed each year for members of the research team to survey and conduct focus groups with dairy owners / supervisors and dairy workers in the states of Colorado, Utah, Texas, New Mexico, South Dakota, North Dakota. After an initial visit in each state to recruit participating dairies and introduce the study, we will focus annual activities in regional areas (Mountain region of Colorado and Utah, South region of Texas and New Mexico, and North region of South and North Dakota). Travel is also requested for the PI and or postdoctoral fellow to attend national or regional scientific and producer agricultural (dairy) meetings.

Travel - International ($3,500)
As outlined in the Center narrative, HICAHS has organized an International Dairy Research Consortium to collaborate with other international research centers involved in improving the health and safety of dairy workers. Dairy workers throughout the U.S. and abroad are confronted with many of the same challenging issues that dairy workers in our region face. Funds are requested for international travel for one meeting per year to continue and grow our productive collaboration among researchers involved in dairy worker health and safety. The plan is for this consortium to meet in conjunction with an international agricultural health and safety conference to further maximize our resources.

Other Direct Costs ($10,000)
Participant incentives will be provided for all volunteers completing surveys and participating in focus groups. The majority of costs will be incurred in Years 01 - 04 and less in Year 05. Survey respondents will be paid incentives of $20 and focus group participants will be paid incentives of $25-$50 (depending on time and employment position). Estimate $8,800 in Year 02.

Additionally, we will need funds to host all-day meetings (which some will consist of multiple days) with dairy partners (owners, dairy Extension specialists, and other dairy professionals) that will assist with recruitment and conduct of the study procedures.

We also anticipate other costs associated with long distance phone and video-conferencing with dairy partners.

Consortium Costs ($6,000)
We will have a sub-contract with Dr. David Doup rate, Ph.D. at the University of Texas Health Science Center to assist in the recruitment of dairy operations and subjects.

Consortium Indirect Costs ($3,000)
Indirect rates are calculated at 50% in Year 02.

Indirect Costs ($47,540)
Indirect rates are calculated at 31.3% MTDC in Year 02.
BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.

Follow this format for each person. DO NOT EXCEED FOUR PAGES.

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<th>NAME</th>
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<td>Tellechea, Maria Teresa</td>
<td>Assistant Professor</td>
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<tr>
<td>Teresa Tellechea</td>
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<th>EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</th>
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<td>University of Colorado at Boulder, CO.</td>
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A. Personal Statement

I am a Cultural/Medical Anthropologist bilingual and bicultural in Spanish and English. My professional experience allows me to understand social phenomena in a holistic way and connect to the realities of those who are part of the process we are examining. When identifying barriers or facilitators in the development of effective safety training in the dairy industry, it is critical that we address the cultural components that the large Latino workforce brings to the process. I have worked with the Latino Community for 15 years to improve the quality of life in various capacities from the ground-up. My contribution to the proposed project will be based on my experience and/or training in:

1. Qualitative research (collecting, analyzing and evaluating data through participant observation, focus groups, in depth interviews and surveys, all in Spanish and English);

2. Health education campaigns targeted to Latino population, including building coalitions with stake holders in the community, creating meaningful partnerships with community based organizations and building capacity to address health issues;

3. Social marketing in the public health sector (e.g., segmentation, creating targeted messaging for behavioral change);

4. Designing educational materials and presentations in Spanish that are culturally congruent.

B. Positions and Honors

(Most relevant professional activity to the current application)

2012-present Assistant Professor, Department of Environmental Health and Radiological Sciences, Colorado State University, Fort Collins, CO

2011-present Adjunct Cultural Anthropology Professor, Department of Anthropology, Colorado State University, Fort Collins, CO

2010 Consultant, Early Childhood Council of Larimer County (ECCLC) and United Way of Weld County’s Promises for Children, Weld County’s Early Childhood Council under El Pomar Foundation’s North Regional Council project: Best Start for Babies

2010 Consultant, Early Childhood Council of Larimer County (ECCLC), Colorado Trust Health Integration Grant
Program Director/Principal Investigator (Last, First, Middle): Reynolds, Stephen J.

**EP1 - Rosecrance - Safety Training**

2009-2011 Lecturer, Medical Anthropology, Department of Anthropology, University of Northern Colorado, Greeley, CO
2009 Consultant, Cultural Communication, Larimer County Dept. of Health, Larimer County, CO
2008-2009 Health Educator, Larimer County Department of Health, Larimer County, CO
2007-2008 Criminal Defense Investigator, Office of the Colorado State Public Defender, Greeley Regional Office, Greeley, CO
2006-2007 Latino/a Achievement Advisor, Poudre School District, Fort Collins, CO
2005-2006 Community Health Specialist, Boulder County Public Health, Boulder, CO
1999-2002 Cultural Liaison/Interpreter, Colorado Mental Health Institute, Fort Logan, CO
1999-2002 Ethnographic Researcher, University of Colorado at Boulder, Boulder, CO
2001 Focus Group Consultant, Bilingual (English/ Spanish), Comm. Serv. Division of Boulder County
2000 Cultural Liaison/ Interpreter, Denver Public School/Cleo Wallace Centers Day Treatment Programs (Child & Adolescent Psychiatric Facility), Denver, CO.
1997 Social Worker Case Assistant, Child Protective Services (CPS), Texas Department of Protective and Regulatory Services
1995-1996 Research Assistant, Mental Health Institute, Fort Logan, CO
1995-1996 Project Assistant, Center for Cultural Dynamics (CCD), Denver, CO.

**Relevant Memberships**

2009-2011 Board of Directors, Embrace Colorado [www.embracecolorado.com], CO Statewide
2010 Member, Community Advisory Committee, Larimer County Department of Health, Larimer County, CO
2008-2009 Member, Tobacco Disparities Advisory Committee (TDAC) —State level.
2008-2009 Steering Committee Member, VIDA SANA Community Coalition.
2008-2009 Member, Latino Statewide Tobacco Prevention and Education Network (LSTPEN).
2008-2009 Member, Thompson School District and Community Diversity, Loveland, CO.
2007- Community Representative, Restorative Justice Program, City of Fort Collins.
2006-2007 Board of Directors, Northern Colorado Multicultural Corporation (dissolved).
2000-2002 Co-President, Scholarship Committee Chair and Mentor, Boulder County Latina Women's League.
2002-2008 Member, National Association for the Practice of Anthropology
2001-2008 Member, American Anthropological Association
1999-2001 Community Voting Member, Cultural Events Board, University of Colorado at Boulder.
1999 Multicultural/Diversity Subcommittee, Member Ex Officio, Colorado Department of Human Services (CDHS), Denver, Colorado.

**Honors**

2011 Engaged Scholar Award, Nominated, University of Northern Colorado.
2011 Summer Support Initiative for Research and Grant Writing, University of Northern Colorado.
1994-95 Spimfax Program Doctoral Scholarship, University of Colorado at Boulder.

**C. Publications**

D. Research Support

None
PROGRESS REPORT SUMMARY

PROGRAM DIRECTOR / PRINCIPAL INVESTIGATOR
John Rosecrance

APPLICANT ORGANIZATION
High Plains Intermountain Center for Agricultural Health and Safety - HICAHS

TITLE OF PROJECT (Repeat title shown in Item 1 on first page)
Enhancing Safety Training Effectiveness in Industrialized Dairy Production (EP1)

A. Human Subjects (Complete Item 6 on the Face Page)
   Involvement of Human Subjects ☒ No Change Since Previous Submission ☐ Change

B. Vertebrate Animals (Complete Item 7 on the Face Page)
   Use of Vertebrate Animals ☒ No Change Since Previous Submission ☐ Change

C. Select Agent Research
   ☒ No Change Since Previous Submission

D. Multiple PI/Co-Leadership Plan
   ☒ No Change Since Previous Submission

E. Human Embryonic Stem Cell Line(s) Used
   ☒ No Change Since Previous Submission

SEE PHS 2590 INSTRUCTIONS.

WOMEN AND MINORITY INCLUSION: See PHS 398 Instructions. Use Inclusion Enrollment Report Format Page and, if necessary, Targeted/Planned Enrollment Format Page.

A. Specific Aims

Aim 1: Develop, implement, and evaluate safety workshops that enhance the effectiveness of safety training for dairy workers and managers. Status: ongoing

Aim 2: Develop, implement, and evaluate a dairy communication campaign designed around the strategies tested and refined in the dairy safety workshops in Specific Aim 1. Status: ongoing

The aims have not been modified.

B. Studies and Results

Project activities have been initiated to achieve Aim 1. We obtained human subjects approval in March 2012. An addendum was submitted to conduct individual interviews with some focus group participants to gain additional insight into cultural training barriers. We have initiated fieldwork starting with participant observation in the dairy environment by living and working with the dairy workers for an extended period of time to help understand safety from the workers' perspective. Recruiting dairies for participation in the project included building and cultivating relationships and partnerships with dairy extension specialists and field extension specialists. We also met with owners, managers, supervisors and workers in Colorado, New Mexico, Texas and South Dakota from January through April 2012. We have recruited two dairies in South Dakota, two in Colorado and in the process of recruiting four in New Mexico and Texas.

We have established a collaborative partnership with dairy extension specialists at South Dakota State University. Dates for focus groups (in Spanish and English) in South Dakota are currently being scheduled between the field Extension specialist and owners in two South Dakota dairies for the end of May and beginning of June 2012.

Project personnel have attended workshops and conferences related to dairy safety in several states.
These meetings have included:
- I-29 Dairy Conference in South Dakota, February 2012
- High Plains Dairy Conference in Texas, March 2012
- Central Plains Dairy Expo in South Dakota, March 2012


In the first quarter of the project year we focused on recruiting and hiring a Project Director. Thus, we had a slight delay in starting some of the activities proposed in the timetable for year 1. Fortunately, however we recruited an outstanding Project Director with expertise in key areas. We have also recruited two graduate students from Occupational Psychology and Anthropology (bilingual) at Colorado State University to assist with data collection and data analysis.

C. Significance
The critical need for effective safety training specific to Latino workers in the large-herd dairy industry was highlighted at the HICAHS Dairy Health and Safety Workshop in October 2009 and emphasized by members of the I-29 Dairy Consortium (SD, ND, IA, MN border region dairies) during a series of safety workshops organized by HICAHS. Our preliminary studies involving dairy workers employed in large herd operations (in CO, TX, NM, SD and ND) indicated that approximately 95% percent were represented by a vulnerable Latino population. Thus, it was critical to recruit a Project Director to our project team with expertise in research and community services involving our target audience. Although we had anticipated hiring a postdoctoral fellow, we recruited an Assistant Professor from Cultural Anthropology who is bilingual in Spanish and English and has extensive experience in working with Latino/a communities. This was a significant boost for the project as it gives us expertise in critical areas (cultural barriers, Latino/a populations, and community organization) needed for the success of the project.

Other significant developments included the rapid and successful recruitment of dairy farmers and operations. We exceeded our expectations in the number of State Extension Specialists and dairies willing to work with us on the project. Thus, it has been a very productive three quarters in Year 1 of this project.

D. Plans
- Recruit additional dairies.
- Collect data in South Dakota and Colorado (focus groups, structured interviews, and worker surveys) to begin to understand the barriers and facilitators related to safety training in the dairy industry.

E. Change in Personnel
Dr. Peter Chen has resigned from Colorado State University and will no longer be involved in the project. His responsibilities will be assumed by the PI and other project team members. Dr. Teresa Tellechea, PhD has been added to Key Personnel as a co-investigator and Project Director. She will work with Dr. Rosecrance on all aspects of the daily conduct of the study, including recruitment of partners, data collection, written reports, publications, training, leading focus groups, and providing specialized assistance in the area of cultural appropriateness, qualitative measures, translation of materials, culturally targeted dissemination.
**Inclusion Enrollment Report**

This report format should NOT be used for data collection from study participants.

**Study Title:** Enhancing Safety Training Effectiveness in Industrialized Dairy Production  
**Total Enrollment:** 90  
**Grant Number:** 2U54OH008085-08  
**Protocol Number:** 12-3246H

### PART A. TOTAL ENROLLMENT REPORT: Number of Subjects Enrolled to Date (Cumulative) by Ethnicity and Race

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* These totals must agree.  
** These totals must agree.
NOTICE OF APPROVAL FOR HUMAN RESEARCH

DATE: March 16, 2012
TO: Resecrance, John, 1681 Env & Rad Health Sciences
DeVries, Allison, 1681 Env & Rad Health Sciences, Menger, Lauren, 1876 Psychology, Tellechea Sanchez, Teresa, 1787 Anthropology, Nickoloff, Jae, 1681 Env & Rad Health Sciences

FROM: Barker, Janell, CSU IRB 1

PROTOCOL TITLE: Enhancing Safety Training Effectiveness in Dairy Production

FUNDING SOURCE: National Institute of Health

PROTOCOL NUMBER: 12-3246H

APPROVAL PERIOD: Approval Date: March 16, 2012 Expiration Date: February 16, 2013

The CSU Institutional Review Board (IRB) for the protection of human subjects has reviewed the protocol entitled: Enhancing Safety Training Effectiveness in Dairy Production. The project has been approved for the procedures and subjects described in the protocol. This protocol must be reviewed for renewal on a yearly basis for as long as the research remains active. Should the protocol not be renewed before expiration, all activities must cease until the protocol has been re-reviewed.

If approval did not accompany a proposal when it was submitted to a sponsor, it is the PI's responsibility to provide the sponsor with the approval notice.

This approval is issued under Colorado State University's Federal Wide Assurance 00000647 with the Office for Human Research Protections (OHRP). If you have any questions regarding your obligations under CSU's Assurance, please do not hesitate to contact us.

Please direct any questions about the IRB's actions on this project to:

Janell Barker, Senior IRB Coordinator - (970) 491-1655 Janell.Barker@Colostate.edu
Evelyn Swiss, IRB Coordinator - (970) 491-1381 Evelyn.Swiss@Colostate.edu

Barker, Janell

Barker, Janell

Includes:
Approval is for 90 focus group participants using the approved consent form for managers and employees in English and Spanish. CONDITION OF APPROVAL: The individual interview questions must be submitted for review if they are changed from the focus group questions, the survey consent and questions must also be submitted for review and approval prior to implementation. If the number of participants will increase beyond 90, please submit an amendment to request additional participants.

Any changes to the approved protocol and documents must be submitted for review and approval.

Approval Period: March 16, 2012 through February 16, 2013
Review Type: EXPEDITED
IRB Number: 00000202
Funding: National Institute of Health
TO: Dr. David Doupghare  
UT-H - SPH - San Antonio Regional Campus

FROM: Cynthia Edmonds, MLA  
Office of Research Support Committees

DATE: March 28, 2012

RE: HSC-SPH-12-0200  
Enhancing Safety Training Effectiveness in Dairy Production

Reference Number: 082560

Dear Dr. Doupghrate,

The Committee for the Protection of Human Subjects has reviewed the information provided for the project referenced above. It is our determination that your part of the overall project, as outlined in the Scope of Work, is not research with human subjects. Therefore, further formal IRB review and approval is not required.

Thank you for keeping us informed.
1. PROGRAM INCOME (See instructions.)
All applications must indicate whether program income is anticipated during the period(s) for which grant support is requested. If program income is anticipated, use the format below to reflect the amount and source(s).

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<th>Budget Period</th>
<th>Anticipated Amount</th>
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2. ASSURANCES/CERTIFICATIONS (See instructions.)
In signing the application Face Page, the authorized organizational representative agrees to comply with the policies, assurances and/or certifications listed in the application instructions when applicable. Descriptions of individual assurances/certifications are provided in Part III of the PHS 708, and listed in Part I, 4.1 under Item 14. If unable to certify compliance, where applicable, provide an explanation and place it after the Progress Report (Form Page 5).

3. FACILITIES AND ADMINISTRATIVE (F&A) COSTS
Indicate the applicant organization’s most recent F&A cost rate established with the appropriate DHHS Regional Office, or, in the case of for-profit organizations, the rate established with the appropriate PHS Agency Cost Advisory Office.

☐ DHHS Agreement dated: 06/28/2011
☐ No Facilities and Administrative Costs Requested.

☐ No DHHS Agreement, but rate established with _______________________________ Date __________________________

CALCULATION*

 Entire proposed budget period:  Amount of base $151,886 x Rate applied 31.3% = F&A costs $47,540

*Check appropriate box(es):
☐ Salary and wages base  ☑ Modified total direct cost base  ☐ Other base (Explain)

☐ Off-site, other special rate, or more than one rate involved (Explain)

Explanation (Attach separate sheet, if necessary):
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</tbody>
</table>

**SUBTOTALS**

|                  |                |            |             |              | 59,009           | 9,794           | 68,803  |

**CONSULTANT COSTS**

**EQUIPMENT (Itemize)**

**SUPPLIES (Itemize by category)**

Miscellaneous project supplies

**TRAVEL**

Travel to focus group meetings; out-of-state travel to agricultural partners;
National/Regional meeting for PI and Co-Investigator

250

**INPATIENT CARE COSTS**

**OUTPATIENT CARE COSTS**

**ALTERATIONS AND RENOVATIONS (Itemize by category)**

**OTHER EXPENSES (Itemize by category)**

Agricultural Community-Initiated Small Grants - $34,000;
Long Distance phone, printing, postage - $150; Sponsored Functions (all-day meetings with collaborators) - $550

34,700

**SUBTOTAL DIRECT COSTS FOR NEXT BUDGET PERIOD**

$ 111,553

**TOTAL DIRECT COSTS FOR NEXT BUDGET PERIOD (Item 8a, Face Page)**

$ 111,553
Provide a detailed budget justification for those line items and amounts that represent a significant change from that previously recommended. Use continuation pages if necessary.

**Personnel ($68,803)**

Rosecrance, John, Ph.D., Principal Investigator, Colorado State University, 1.40 academic person-months, 0.47 summer person-months (15.5% effort) in Year 02. Dr. Rosecrance has a broad background in human factors and ergonomics, with specific experience in key research areas outlined in this application including participatory research, experience working with community partners in agriculture, and dairy related research. His research focus over the last twenty years has been in the prevention of injuries and illnesses in the agriculture and construction industries. He is PI of two NIOSH funded grants in our current HICAHS Center to 1) identify injury risk and develop prevention strategies in the dairy industry and 2) to assess the effectiveness of translation and dissemination efforts among community-based health and safety initiatives. The latter project served as the foundation for the proposed study. Dr. Rosecrance will serve as PI and work with his co-investigators who provide additional expertise in cultural anthropology, specifically Latino populations, (Tellechea), agricultural science and Extension (Lamm), and in the field of communication, translation and dissemination (O’Keefe-Year 3). As the PI of the proposed project, Dr. Rosecrance will be responsible for all aspects of the study including the supervision of the HICAHS coordinator and graduate student that will be involved. Dr. Rosecrance will have overall responsibility for planning, conduct, and management of the proposed project, supervision of staff.

(continued)

| CURRENT BUDGET PERIOD | FROM 09/15/2011 | THROUGH 09/14/2012 |

Explain any estimated unobligated balance (including prior year carryover) that is greater than 25% of the current year's total budget. We will have an anticipated unobligated balance of funds of approximately 46%. The unobligated funds were primarily due to the use of our no cost extension funds to support some new community-initiated project grants rather than current funds. This will result in a greater number of funded community-initiated projects being supported this year than we originally anticipated. We still have nearly 4 months remaining in the fiscal year and anticipate the possibility of funding additional community-initiated programs which may bring our unobligated funds below 25%.
Budget Justification (cont'd)

facilitation of focus group meetings, administration of pre and post-test surveys, data management and analysis, quality assurance, and preparation of reports, manuscripts, and presentations. Dr. Rosecrance will meet with his co-investigators monthly and project staff weekly to ensure communication regarding coordination and conduct of the project aims.

Chen, Peter, Ph.D., Co-Investigator, Colorado State University, has left the Colorado State University and will no longer be working on the project. We have recruited Dr. Teresa Tellechea to replace Dr. Chen.

Tellechea, Teresa, Ph.D., Co-Investigator, Colorado State University, 0.45 academic person-months, 0.15 summer person-months, (5% effort) in Year 02. Dr. Tellechea is a cultural / medical anthropologist with more than 10 years of experience working with Latino populations on cultural appropriateness of interventions, training, and community involvement. Dr. Tellechea adds significant value to this project with her knowledge of the target population, overcoming cultural barriers to adoption of interventions and she is fluent in Spanish and English languages. Dr. Tellechea will assist Drs. Rosecrance and Lamm and the community partners that have projects involving Hispanic or Latino workers. She will provide recommendations for working with the target population of Latinos, assisting in translation of language and identifying cultural barriers to intervention dissemination and adoption.

Lamm, Dennis, Ph.D., Co-Investigator, Colorado State University, 0.18 academic person-months, 0.06 summer person-months (2% effort) in Year 02. Dr. Lamm was raised on a dairy farm in southeastern Pennsylvania and subsequently served as an Extension 4-H agent in Trinidad, Colorado, from 1972-1973. After completing his Ph.D. in 1976, he was on the faculty at Virginia Tech for five years in a resident instruction/research position in the animal science department. In 1981 he moved to Colorado State University as Extension Beef Specialist in the animal science department. In 1986, he became Extension Assistant Director for Agriculture & Natural Resource Programs, a position he held until 1997. In 1994 he was appointed Colorado Extension's Western Sustainable Agriculture Research & Education (WSARE) Professional Development Program Coordinator until the present. In 2003, he was appointed Director of the Master of Agriculture – Agricultural Extension Education professional graduate degree program through the Dean's office in the College of Agricultural Sciences. He has had an Extension faculty appointment at CSU for more than 32 years. Dr. Lamm understands the agricultural community very well through his Extension services and outreach development. His primary contributions will be in assisting Dr. Rosecrance with the recruitment of additional agricultural organizations and Extension partners and working with the research team and community partners to engage in community-initiated health and safety activities. He will also provide assistance to the research and community partner teams in the identification of targeted translation and dissemination strategies.

DeVries, Allison, MPH, Co-Investigator, Colorado State University, 2.40 calendar months (20% effort) in Year 02. As a public health professional (MPH) with experience in occupational health and safety at the local, regional, and national level, Ms. DeVries can provide valuable assistance to the team of investigators working on the project “Enhancing Translation and Dissemination through Agricultural Partnership.” Her responsibilities on the proposed project will include assisting Dr. Rosecrance with administration of the project, communicating with all community organizations and personnel involved, tracking the administration of funds, assisting grant applicants with the community-initiated grant application, translating English-Spanish as needed, and assisting with pre- and post-test and focus groups.

To-Be-Named, Graduate Research Assistant, Colorado State University, 6.0 calendar months (50% effort) in Year 02. The GRA will work closely assisting Dr. Rosecrance and Ms. DeVries on the daily activities involved with the proposed project. The GRA will also be the individual working alongside Dr. Rosecrance with the community partners.

Fringe rates are assessed at the rate of 24.4% in Year 02 for the PI, Co-Investigators, and the Center Coordinator; 3.5% in Year 02 for the Graduate Research Assistant.
Budget Justification (cont'd)

Travel ($7,800)
Local and out-of-state travel will be required each year for visits to the agricultural partners and end-users involved in the various aspects of the project. Local (Colorado) travel is anticipated to attend focus group meetings throughout the State. We anticipate 5-8 trips per year with an average of 200 miles round trip each. Some local (Colorado) travel may involve spending overnight at hotels depending on the location.

Out of state travel to agricultural partners is anticipated twice per year. Estimated average travel costs per trip will depend on the specific location, time involved, and mode of transportation. We estimate that the travel costs for each trip will average approximately $500. We also anticipate one national/regional meeting (PI and one Co-Investigator) each year for presentation and dissemination of project results.

Materials and Supplies ($250)
Supplies needed to administer pre- and post-test to focus groups; computer/storage accessories will be needed each year.

Other Direct Costs ($34,700)
As outlined in the narrative, we are requesting funds each year for the Agricultural Community-Initiated Small Grants Program. We anticipate awarding from 3 to 4 community grants (ranging from $7,000 to $10,000 per community partner) for regional agricultural health and safety initiatives each year.

Additionally, we will need funds to host all-day meetings (which some will consist of multiple days) with collaborators and community partners.

We also anticipate other costs associated with long distance phone and video-conferencing with community partners.

Indirect Costs ($34,916)
Indirect rates are calculated at 31.3% MTDC in Year 02.
Aims

Aim 1: Augment regional agricultural health and safety education programs by providing community-initiated small grants to regional agricultural partners involved in the prevention of occupational injuries and illnesses.

Aim 2: Enhance and refine the translation and dissemination activities of organizations receiving community-initiated small grants through formative evaluation and impact assessment processes.

The original Specific Aims of this project have not been modified.

B. Studies and Results

One community-initiated small grant was provided to one community partner during this period. A second and likely a third one is anticipated prior to the end of this grant year. The community-initiated project that was funded was for a Dairy Extension Specialist in New Mexico to produce a DVD video specific to safety training on large-herd dairies. Large-herd dairies are common throughout the HICAHS region. The second community initiated proposal is expected from the South Dakota Dairy Extension Specialist before the end of the grant year. An additional community-initiated grant proposal was submitted but not funded due to lack of an evaluation plan.

C. Significance

A significant feature of the community initiated project in New Mexico is the similarity between dairy production from that area of the country to Colorado and other states in the HICAHS region. Thus, the video will be appropriate for workers and managers in dairy operations throughout the geographical region spanning from New Mexico to North Dakota. An additional significant feature is the contribution from our new cultural anthropologist, Dr. Tellechea, to assist in designing the video to be more appropriate for the Latino/a population. Dr. Tellechea will also assist in the evaluation of the video with the Latino community.
D. Plans

Recruit an additional two community proposals before the end of the grant year. We will evaluate the effectiveness of the DVD training videos related to dairy safety. We anticipate providing three to four additional community-initiated grants in the next 12 months.

E. Change in Personnel

Dr. Peter Chen has resigned from Colorado State University and will no longer be involved in the project. His position is being replaced by Dr. Teresa Tellechea as outlined in the budget justification. Dr. Tellechea will assist in the area of cultural competence, assisting community partners with developing cultural appropriate materials and working with the co-investigators on translation and dissemination. The addition of Dr. Tellechea will boost the r2p component of the project.
1. PROGRAM INCOME (See instructions.)
All applications must indicate whether program income is anticipated during the period(s) for which grant support is requested. If program income is anticipated, use the format below to reflect the amount and source(s).

<table>
<thead>
<tr>
<th>Budget Period</th>
<th>Anticipated Amount</th>
<th>Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. ASSURANCES/CERTIFICATIONS (See instructions.)
In signing the application Face Page, the authorized organizational representative agrees to comply with the policies, assurances and/or certifications listed in the application instructions when applicable. Descriptions of individual assurances/certifications are provided in Part III of the PHS 398, and listed in Part I, 4.1 under Item 14. If unable to certify compliance, where applicable, provide an explanation and place it after the Progress Report (Form Page 5).

3. FACILITIES AND ADMINISTRATIVE (F&A) COSTS
Indicate the applicant organization's most recent F&A cost rate established with the appropriate DHHS Regional Office, or, in the case of for-profit organizations, the rate established with the appropriate PHS Agency Cost Advisory Office.


☐ No DHHS Agreement, but rate established with ___________________ Date ___________________

CALCULATION*

Entire proposed budget period: Amount of base $111,553 x Rate applied 31.3 % = F&A costs $34,916

Add to total direct costs from Form Page 2 and enter new total on Face Page, Item 8b.

*Check appropriate box(es):
☐ Salary and wages base ☒ Modified total direct cost base ☐ Other base (Explain)

☐ Off-site, other special rate, or more than one rate involved (Explain)

Explanation (Attach separate sheet, if necessary):
## Detailed Budget for Next Budget Period - Direct Costs Only

**Reynolds, Stephen J.**

<table>
<thead>
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<th>NAME</th>
<th>Role on Project</th>
<th>Cal. Mths</th>
<th>Acad. Mths</th>
<th>Summer Mths</th>
<th>Salary Requested</th>
<th>Fringe Benefits</th>
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### Subtotals

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### Consultant Costs

- Website Consultant

### Equipment (Itemize)

- 10,400

### Supplies (Itemize by category)

### Travel

- Travel to various HiCAHS project sites to collect stakeholder data; Regional & National AgFF meetings to present findings

- 6,690

### Inpatient Care Costs

### Outpatient Care Costs

### Alterations and Renovations (Itemize by category)

### Other Expenses (Itemize by category)

- Copying, telephone, and postage

- 500

### Subtotal Direct Costs for Next Budget Period

- $110,994

### CONSORTIUM/Contractual Costs

#### Direct Costs

#### Facilities and Administrative Costs

### Total Direct Costs for Next Budget Period (Item 8a, Face Page)

- $110,994
BUDGET JUSTIFICATION

Provide a detailed budget justification for those line items and amounts that represent a significant change from that previously recommended. Use continuation pages if necessary.

**Personnel ($93,404)**
Buchan, Victoria Ph.D., Principal Investigator, Colorado State University, 1.08 academic person-months, 0.36 summer person-months (12% effort) in Year 02. Dr. Buchan will provide administrative leadership to all aspects of the Evaluation Program. She has years of experience as a project PI and expertise in applied research, evaluation research and human behavior. Dr. Buchan will oversee the budget, provide leadership to the evaluation team and serve as the primary interface with all HICAHS proposed Advisory Boards. A key role for Dr. Buchan will be to facilitate a collaborative relationship with all HICAHS project PIs and partners in order to integrate evaluation processes and stakeholder feedback within the Center on an ongoing basis. Dr. Buchan will also be responsible for supervision of the students working with the evaluation team.

Quijano, Louise Ph.D., Co-Investigator, Colorado State University, 1.85 academic person-months, 0.62 summer person-months (20.5% effort) in Year 02. Dr. Quijano will be involved in all aspects of the Evaluation Plan, and assist Dr. Buchan with administration of the Evaluation Program. Dr. Quijano has taught evaluation research and participated in a number of evaluation projects, including working closely with community partners. Dr. Quijano will have primary responsibility for the Key Informant and REACH aspects of the evaluation design: in particular the inclusion of stakeholders and collaborators, instrument development, data collection and data entry procedures. She will also work with the website consultant in the redesign and

(continued)

<table>
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<th>CURRENT BUDGET PERIOD</th>
<th>FROM</th>
<th>THROUGH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>09/15/2011</td>
<td>09/14/2012</td>
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</tbody>
</table>

Explain any estimated unobligated balance (including prior year carryover) that is greater than 25% of the current year’s total budget.

N/A
Budget Justification (cont’d)

development of the program monitoring data collection interface; and assist the Center Coordinator (DeVries) with development of the training materials for all Center personnel and external partners on use of the database.

DeVries, Allison, Center Coordinator, Colorado State University, 1.20 calendar months (10% effort) in Year 02. Allison is currently the Center Coordinator of HICAHS, with an excellent grasp of the mission, goals and individual projects included in the current Center reapplication. She has day to day contact with project PIs and also serves as the primary contact for the Center both internally and externally. This position plays a key role in integrating Center communication and developing synergy between all aspects of the Center. Allison’s role with the Evaluation Program will be to train all Center collaborators and partnerships (for example pilot project PI’s and outreach community partners) on use of the program monitoring database through the HICAHS website.

To-Be-Named Graduate Research Assistant, Colorado State University, 6.0 calendar months (50% effort) in Year 02. The graduate student hired for this position will assist with data collection, including telephone interviews, and survey research. The GRA will also be primarily responsible for data entry and analysis utilizing SPSS. This position will focus particularly on the Research-Practice Integration scales to be collected from multiple sources on a yearly basis and be responsible for all data and project files.

To-Be-Named, Graduate Research Assistant, Colorado State University, 6.0 calendar months (50% effort) in Year 02. A PhD student in the School of Social Work will be hired to assist the PI and Co-Investigator with all aspects of data collection. In particular this position will assist with: the development of Key informant, and REACH framework data collection instruments, with data collection processes from multiple stakeholders and with all aspects of preparing data for entry, analysis and reporting. This position will also have primary responsibility for supervision of the HICAHS program monitoring database, and development of the necessary queries to facilitate progress and yearend reports. In addition, it may be necessary to both train and assist PIs with collection of information that might be useful to them and their projects on an ongoing basis.

Fringe rates are assessed at the rate of 24.4% in Year 02 for the PI, Co-Investigators, and the Center Coordinator; 3.5% in Year 02 for the Graduate Research Assistants.

Consultants ($10,400)
Web Consultant: A consultant is requested to assist both the Evaluation Program and HICAHS to redesign the HICAHS Website. The website has not had consistent attention, and is now in need of updating. In particular the website is now required to integrate with the Website Design specifications of Colorado State University. The expertise is also needed to develop a user friendly program monitoring database interface to facilitate the continuous collection of HICAHS activities, products and partnerships. It is also important that access to the data entered be easy to collate and be integrated into the NIOSH required progress and yearend report format.

Travel - ($6,690)
The requested travel dollars include expenses for Evaluation Program Personnel to travel to various HICAHS project sites (Research Core, Prevention/Intervention Core, Education/Translation Core and Outreach Project) to collect stakeholder data. In addition the dollars are requested to allow the PI and Co-PI to travel to regional and national AgFF Health and safety meetings to present.

Other Direct Costs ($500)
Funds are requested for printing/copying expenses and long distance telephone costs associated with telephone survey data collection.

Indirect Costs ($34,741)
Indirect rates are calculated at 31.3% MTDC in Year 02.
Progress Report Summary

Program Director/Principal Investigator (Last, First, Middle): Reynolds, Stephen J.

Grant Number
2U54OH008085-08

Period Covered by this Report
From 09/15/2011 Through 09/14/2012

Applicant Organization
High Plains Intermountain Center for Agricultural Health and Safety - HICAHS

Title of Project (Repeat title shown in Item 1 on first page)
Evaluation Program

A. Human Subjects (Complete Item 6 on the Face Page)
   Involvement of Human Subjects ☒ No Change Since Previous Submission ☐ Change

B. Vertebrate Animals (Complete Item 7 on the Face Page)
   Use of Vertebrate Animals ☒ No Change Since Previous Submission ☐ Change

C. Select Agent Research
   ☒ No Change Since Previous Submission ☐ Change

D. Multiple PD/PI Leadership Plan
   ☒ No Change Since Previous Submission ☐ Change

E. Human Embryonic Stem Cell Line(s) Used
   ☒ No Change Since Previous Submission ☐ Change

See PHS 2950 Instructions.
Women and Minority Inclusion: See PHS 398 Instructions. Use Inclusion Enrollment Report Format Page and, if necessary, Targeted/Planned Enrollment Format Page.

A. Specific Aims

Aim 1: Ongoing. Evaluate leadership, guidance, and management of the Administrative Core related to progress on goals and the integration of Internal and External Center stakeholders.
No Modifications have been made to the Specific Aims since the inception of funding. An instrument has been developed to evaluate the leadership, guidance, and management of the Administrative Core related to progress on goals and the integration of Internal and External Center stakeholders.

Aim 2: Ongoing. Evaluate Research Core progress on specific aims and translation potential.
No Modifications have been made to the Specific Aims since the inception of funding. A Research-Practice Integration Scale was developed and administered to measure stakeholder perceptions of the utility of each projects' applicability to the workplace and its relationship to regional and national priorities. For the Bioaerosol Exposures and Models of Human Response in Dairies and Cattle Feedlots the overall Mean was 7.79 out of a possible score of 10. The potential utility for reducing agricultural illness/disease was also high (M = 8.17) as were the scores for relevance to national agricultural health and safety (M = 8.0) and regional relevance (M = 7.83).

Aim 3: Ongoing. Evaluate Prevention/Intervention Core progress on specific aims and translation potential.
No Modifications have been made to the Specific Aims to the Evaluation Prevention/Intervention Core projects since the inception of funding. A Research-Practice Integration Scale was developed and administered to measure stakeholder perception of the relevance to regional and national agricultural health and safety goals as well as the potential for "real world" application. For the Development and Evaluation of Computer-based ROPS Design Program, the overall Mean was 8.3 out of a possible score of 10. The relevance to regional and national agricultural health and safety scores were also high (M = 8.77 and M = 9.8, respectively). The potential for "real world" application was M = 8.31 out of 10. The second project, Dairy Ergonomics had an overall Mean score of 8.1. The relevance to regional agricultural health and safety was rated high (M = 8.46) as was the score for national relevance (M = 8.42). The potential for "real world" Application had a Mean score of 8.15 out of 10.
Aim 4: Evaluate Educational/Translation Core progress on specific aims and translation potential.
No modifications have been made to the specific aims for the Educational/Translation core since the inception of funding. An Education/Translation Research-Practice Integration Scale was developed and administered for use with External Advisory Board Members as well as member of target groups of the Education/Translation project to determine stakeholder perception of potential for adoption. The Dairy Safety Training Project was highly rated with an overall Mean = 8.45 out of a possible score of 10. The regional relevance score was $M = 9.07$ and the national relevance score for agricultural health and safety goal was $M = 8.71$. The adoption potential score was $M = 8.14$.

Aim 5: Evaluate methods and impact of the Outreach Program - Ongoing
A number of activities have been undertaken to address the 5 specific aims of the Outreach Program. Specific Aim 1). The HICAHS website is being revised to reflect current projects and to include downloadable products for our constituency. During our December 2011 Advisory Board Meeting a regional needs assessment was added to existing data through identification of issues and resources. #2) The regional Dairy Health and Safety Network and the Dairy Advisory Board have both been established. #3) The Center continues to collect and test cultural appropriateness of both education and training materials. #4) Status of NASD unclear at this time. #5) Vulnerable Population Conference at CSU, co-sponsored by HICAHS, June, 2012.

Aim 6: Evaluate Center Pilot/Feasibility projects for capacity building and regional utility and response to emerging issues – Ongoing
The Pilot/Feasibility Project Program published an RFP and received six applications for pilot projects. The projects were peer reviewed and those listed below were funded in January 2012, these activities address project specific aims # 1 and # 3. The first project listed in figure 2 below addresses specific aim #2 by developing a new collaborative partnership with a regional state agency, the Colorado State Department of Health and Environment. The dollars specifically targeted to emerging issues and extramurally-funded research (Aim 4) have not yet been awarded, but a potential project topic that is very relevant to our region (ATVs) has been identified.

B. Studies and Results

Figure 1 below, presents results of Advisory Board feedback related to projects in each Core identifying perceived r2p value. Figure 2 presents the pilot projects awarded by HICAHS so far this FY.

C. Significance

The significance of the evaluation project is to identify progress on the objectives of Center projects, to assist PIs with barriers or issues that may be impeding their work, and most importantly to gain the feedback and recommendations of multiple stakeholder groups to enhance adoption and diffusion of Center research and products.

D. Plans

The Evaluation project staff plan to continue to address the Specific Aims during the rest of the FY. One of the most important accomplishments during this year is completion of a new database for HICAHS project evaluation data. This database is being developed in SQL in order to facilitate data entry by project PIs through the HICAHS website. The new database represents a major step forward from the ACCESS database used for years by all Agricultural Centers, with screen form data entry and PI access to all data related to their projects.
Figure 1. Mean scores of Core projects on 10 point r2p scale.

<table>
<thead>
<tr>
<th>Year</th>
<th>Investigator(s)</th>
<th>Project Title (PILOTS)</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>Amy Warner (PI): Meredith Towle (Project Manager)</td>
<td>Acute Pesticide Poisoning Experiences of Certified Applicators in Colorado</td>
<td>CO</td>
</tr>
<tr>
<td>2012</td>
<td>Meghan Mensack (PI); Charles Henry (PI)</td>
<td>In vitro microsystem for determining acute pesticide toxicity</td>
<td>CO</td>
</tr>
<tr>
<td>2012</td>
<td>Margaret Davidson (PI); Lawrence Goodridge (PI)</td>
<td>Bioaerosol Monitoring; preventing the spread of infectious diseases among farmers</td>
<td>CO</td>
</tr>
</tbody>
</table>

Figure 2. Pilot projects awarded in FY 2012
DATE: August 22, 2011

TO: Victoria Buchan, School of Social Work
    Louise Quijano, School of Social Work

FROM: Janell Barker, IRB Administrator
      Research Integrity & Compliance Review Office

TITLE: Evaluation Project Core - HICAHS

IRB ID: 105-12H       Review Date: August 22, 2011

The Institutional Review Board (IRB) Administrator has reviewed this project and has declared the study exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b)(2): Research involving the use of educational tests, survey procedures, interview procedures or observation of public behavior, unless: a) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects.

CONDITIONS: As specific surveys/evaluations become available for the various projects, please submit them for our files.

The IRB determination of exemption means that:

- You do not need to submit an application for annual continuing review.

- You must carry out the research as proposed in the Exempt application, including obtaining and documenting (signed) informed consent if stated in your application or if required by the IRB.

- Any modification of this research should be submitted to the IRB through an email to the IRB Administrator, prior to implementing any changes, to determine if the project still meets the Federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB proposal will need to be submitted and approved before proceeding with data collection.

- Please notify the IRB if any problems or complaints of the research occur.

Please note that you must submit all research involving human participants for review by the IRB. Only the IRB may make the determination of exemption, even if you conduct a similar study in the future.
CHECKLIST

1. PROGRAM INCOME (See instructions.)
All applications must indicate whether program income is anticipated during the period(s) for which grant support is requested. If program income is anticipated, use the format below to reflect the amount and source(s).

<table>
<thead>
<tr>
<th>Budget Period</th>
<th>Anticipated Amount</th>
<th>Source(s)</th>
</tr>
</thead>
</table>

2. ASSURANCES/CERTIFICATIONS (See instructions.)
In signing the application Face Page, the authorized organizational representative agrees to comply with the policies, assurances and/or certifications listed in the application instructions when applicable. Descriptions of individual assurances/certifications are provided in Part III of the PHS 398, and listed in Part I, 4.1 under Item 14. If unable to certify compliance, where applicable, provide an explanation and place it after the Progress Report (Form Page 5).

3. FACILITIES AND ADMINISTRATIVE (F&A) COSTS
Indicate the applicant organization’s most recent F&A cost rate established with the appropriate DHHS Regional Office, or, in the case of for-profit organizations, the rate established with the appropriate PHS Agency Cost Advisory Office.

☑ No DHHS Agreement, but rate established with __________________________ Date __________________________

CALCULATION*

Entire proposed budget period: Amount of base $110,994 x Rate applied 31.3% = F&A costs $34,741

Add to total direct costs from Form Page 2 and enter new total on Face Page, Item 8b.

*Check appropriate box(es):
☐ Salary and wages base ☑ Modified total direct cost base ☐ Other base (Explain)
☐ Off-site, other special rate, or more than one rate involved (Explain)

Explanation (Attach separate sheet, if necessary):
For New and Competing Applications (PHS 398) – DO NOT SUBMIT UNLESS REQUESTED
For Non-competing Progress Reports (PHS 2590) – Submit only Active Support for Key Personnel

PHS 398/2590 OTHER SUPPORT

**REYNOLDS, Stephen J.**

**ACTIVE**

5T42OH009229-05
CDC/NIOSH (Newman UCDHSC) 07/01/11 - 06/30/15 2.64 academic
Mountains and Plains Education Research Center $877,660 0.81 summer

Graduate training support for occupational medicine, industrial hygiene, ergonomics, health physics, and occupational health psychology. Continuing education and outreach.
Role: PI at CSU / Center Deputy Director – responsible for overall leadership and implementation, and Director of Industrial Hygiene Program.

SC11-15 (1 K01 OH009674)
CDC/NIOSH (Nonnenmann University of Iowa) 04/01/10 – 3/31/13 0.56 academic
Measures of Dust, Endotoxin, and Exhaled Nitric Oxide Among Dairy Farm Workers
Oxide Among Dairy Farm Workers
Career development award. Sampling method development and application to field studies in agriculture.
Role: Mentor for K01 Award Dr. Matt Nonnenmann at University of Iowa.

Pinnacol Assurance (Reynolds, PI) 10/26/11 - 08/31/12 0.54 academic
Pinnacol Research Advisory Council - CSU $9,762 0.18 summer
The purpose of this project is to review research and data requests for feasibility and appropriateness, and assist Pinnacol Assurance in its Health Risk Management Research project.

**PENDING**

NIH (Volckens) 08/01/11 - 07/03/13 0.72 academic
Development Research Grant (R21) $149,243 0.24 summer

A Portable Spectrometer for Inhalable Aerosol Size Distributions
The objective of this research is to develop new, inexpensive technology to characterize the size distribution of inhalable aerosol hazards in the workplace.
Role: Co-Investigator

HHS-CDC-Centers for Disease Control (Volckens) 08/01/12 - 07/31/16 0.38 academic
Research Project Grant (R01) $294,524 0.13 summer
Design, Evaluation, & Validation of a Next-Generation Inhalable Aerosol Sampler
This project will develop a low-cost, easy to use, disposable particle sampler that estimates how much dust is inhaled by a worker.
Role: Co-Investigator

**OVERLAP**

None

**STALLONES, Lorann**

**ACTIVE**

R49/CE001168 08/01/07 - 08/31/12 3.0 calendar
CDC/NCIPC $905,500
Colorado Injury Control Research Center
The major goals of this project are to reduce the occurrence and severity of injuries in the Rocky Mountain Region through community-based partnerships, particularly in under-served populations.

Role: PI

1T 42 OH009229 (Newman UCDHSC) 07/01/10 - 06/20/15 1.0 calendar
CDC/NIOSH $144,260
Mountain and Plains Educational Resource Center/Occupational Health Psychology Training
This is an NIOSH Educational and Research Center training grant. Dr. Stallones is the co-director of the Occupational Health Psychology training program portion of the grant.

Role: PI

1 D43TW007267-02A 04/01/07 - 03/31/12 1.0 calendar
National Institute of Health (NIH) $136,339
USA-China Agricultural Injury Research Training Project
To increase training and research related to agricultural injuries in China in order to develop an infrastructure for future sustainable agricultural injury research in China.

Role: PI

H2370094000 08/31/10 - 12/31/11 1.0 calendar
National Park Service $68,170
A collaborative effort to promoting a One Health approach to management in the National Park Service.

Role: PI

PENDING
None

OVERLAP
None

AYERS, Paul D.

ACTIVE
W9132T-08-2-0004 (Ayers) 01/14/08-09/30/12 8.3 calendar
U.S Army ERDC $432,026
Vehicle Dynamics Monitoring and Tracking in Support of Land Management
The goal of this study is to evaluate and validate the terrain impacts of military vehicles using models and GPS.

Role: PI

W56HZV-10-C-0247 subcontract (Ayers) 05/12/10-12/31/12 3.2 calendar
Mechsim Inc. $329,080
Advanced Vehicle/Terrain Interaction modeling to Support Power and Energy Analysis
The goal of this project is the development and validation of vehicle-terrain interaction model.

Role: PI

PENDING
None

OVERLAP
None
BUCHAN, Victoria V.

ACTIVE
None

PENDING
None

OVERLAP
None

DEVRIES, Allison

ACTIVE
None

PENDING
None

OVERLAP
None

DOUPHRATE, David I.

ACTIVE
2U50OH008085 Reynolds (PI) 09/15/06 – 09/14/11 6.0 calendar
CDC/NIOSH/Colorado State U $49,975

CDC/NIOSH HiCAHS Intervention Core: Injury Risk Analysis in Large-Herd Dairy Parlors
The goals of this study are to: 1) assess the risk for traumatic injury as it relates to worker body positioning and animal behavior in different parlor configurations, 2) determine the 12-month period prevalence of musculoskeletal symptoms among workers in parallel, herringbone and rotary dairy parlors, 3) determine the association between parlor exposures or personal factors with prevalent musculoskeletal symptoms among workers in dairy parlors, and 4) identify safety interventions through active participatory partnerships with dairy operators.

SH-22316-SH1 (Pompeii) 09/30/11-09/31/12 1.20 calendar
OSHA $166,000

Safe Patient Handling Among Healthcare Workers, Susan Harwood Targeted Topic Training Program
The goal of this project is to develop a targeted training program for healthcare workers on safe patient handling. The materials are being developed for purposes of training in health care workers in Lean Six Sigma methodology principles which they will apply to developing safe patient handling programs.

2T42OH008421-06 (Symanski) 07/01/11-06/30/16 0.24 calendar
NIOSH/CDC $1,165,046

Southwest Center for Occupational and Environmental Health
The overall goal of the SWCOEH is to provide graduate level academic and research training and continuing education in response to the critical need for well-trained occupational and environmental health specialists. The ERC provides master level training in Industrial Hygiene (IH) and Occupational Health for Nurses (OHN), doctoral level training in Occupational Epidemiology (Occ Epi) and Injury Prevention, and postdoctoral residencies in Occupational and Environmental Medicine (O&EM).
FETHKE, Nathan B.

ACTIVE
U19 OH008868 (Merchant)  09/01/11 - 08/31/16
USDHHS/CDC/NIOSH  $762,825
Healthier Workforce Center for Excellence
  Subproject: Administrative Core  $336,091  0.60 calendar
The Healthier Workforce Center for Excellence at the University of Iowa is designed to improve understanding of effective, integrated employee health programs and to translate this evidence base into practice for the benefit of employed populations, especially the small businesses that typify Iowa and most other states. The administrative core will coordinate center activities, operate a pilot project program, and conduct a vigorous outreach plan.
Role: Co-I and Center Deputy Director

  Subproject: Transdisciplinary Research Project (TRP) #4  $236,755  1.50 calendar
The major goals of TRP4 are to estimate the effect of an integrated health protection (participatory ergonomics supplemented with digital human modeling as a workstation design aid) and health promotion (motivational interviewing) intervention on musculoskeletal health and indicators of modifiable lifestyle risk factors among workers in the window manufacturing industry. A secondary goal is to estimate the economic impact of the intervention at the corporate level.
Role: PI

U50 OH007548 (Gerr)  09/30/11 - 09/26/19
USDHHS/CDC/NIOSH  $896,925
Great Plains Center for Agricultural Health and Safety
  Subproject: Research Project B  $170,304  1.44 calendar
The goals of Research Project B are to estimate the incidence of musculoskeletal symptoms and to estimate associations between physical risk factors and musculoskeletal symptoms among the general population of agricultural workers in the Great Plains Center region.
Role: PI

U60 OH009762 (Stafford)  08/01/11 - 07/31/12  1.56 calendar
USDHHS/CDC/NIOSH  $149,844
National Center for Construction Safety and Health
Ergonomic and Welding Fume Exposures During Stud Welding
The major goal of this project is to evaluate the effect of a commercially-available alternate stud welding system on exposures to physical risk factors for musculoskeletal disorders and welding fume.
Role: PI

T42 OH008491 (O'Shaughnessy)  07/01/08 - 06/30/13  1.20 calendar
USDHHS/CDC/NIOSH  $170,304
Heartland Center for Occupational Safety and Health
Ergonomics Training Program
The goal of this Center is to provide graduate training, continuing education and outreach in occupational safety and health to serve Federal Region VII (IA, KS, MO, NE)
Role: Ergonomics Training Program Director
PENDING
U19 OH008868 (Merchant) 09/01/12 - 08/31/16 0.24 calendar
USDHHS/CDC/NIOSH $222,715
Healthier Workforce Center for Excellence
Transdisciplinary Research Project (TRP) #5
The major goal of TRP5 is to improve employee health outcomes and reduce employee health care costs with an expanded health promotion/protection program that supports employees' healthy lifestyle choices and minimizes the incidence of workplace injuries through improved safety.
Role: Co-I

OVERLAP
None

GIMENO, David

ACTIVE
1U58DP002453-01 (Gimeno & Shaw) 07/17/10 - 03/18/12 2.40 calendar
City of San Antonio / CDC $274,655
San Antonio Communities Putting Prevention to Work (SA-CPPW)
The purpose of the proposed project is to provide a comprehensive process and outcome evaluation of the SA-CPPW program in regards to the program goals and the activities to be implemented to meet those goals. This proposal utilizes the multiple PI option for the evaluation of the San Antonio Communities Putting Prevention to Work (SA-CPPW) RFP 058-10. The complexities and broad scope of the proposed research requires diverse areas of expertise and skills as represented by the Principal Investigators (PIs).

2T42OH008421-06 (Symanski) 07/01/11 - 06/30/16 1.08 calendar
NIOSH $1,161,662
Southwest Center for Occupational Health and Environmental Health
The UT ERC provides advanced degree training in occupational health and safety to meet the critical need for trained professionals in Public Health Region VI. A full spectrum of degree programs, advanced research training, and continuing education courses help meet the needs of Federal Region VI for well-trained professionals to protect the health and safety of the nation's workforce.

5R01GM088781-02 (Gimeno) 08/01/10 - 07/31/14 0.72 calendar
U of TX HSC San Antonio $6,979
The purpose of this randomized, controlled prospective-cohort-longitudinal study is to increase understanding of the mechanisms that contribute to the transition of a diverse group of Academic Health Science Center graduate students who are enrolled in clinical programs of study (medicine, nursing, dentistry, allied health, and public health) into planned pursuit of a clinical research scientist career.

200-2011-39475 (Amick) 08/01/11 - 07/31/15 1.20 calendar
CDC $94,910
Evaluating the Effectiveness of Occupational Safety and Health (OSH) Program Elements in the Wholesale Retail Trade (WRT) Sector
To conduct a survey of organizational policies and practices in a representative sample of firms in the wholesale and retail trade sector in Ohio and to identify the most parsimonious set of organizational indicators of good occupational health and safety performance. To conduct a one-year follow-up of the participating firms and link this data to Ohio bureau of Workers Compensation data to determine the predictive validity of the organizational policies and practices. To partner with NIOSH on a series of workplace interventions to reduce musculoskeletal disorders in wholesale and retail trade.
Program Director/Principal Investigator (Last, First, Middle): Reynolds, Stephen J.

Contract (Gimeno) 01/01/12 - 11/30/12 2.85 calendar
City of San Antonio $25,000
Community Assessment Services for the City of San Antonio’s Project WORTH Program
To provide community assessment services for the City’s Project WORTH Program regarding the
Strengthening Youth Assets in San Antonio (SAY SA) Asset Assessment of 10 San Antonio middle schools
with the goals of (1) providing parent input on evidence based sexual health curriculum for school district
officials and School Health Advisory Councils (SHAC) and (2) identify existing community assets and
programming and provide recommendations to local school communities, district officials and SHACs to
reduce students’ sexual risk behaviors

PENDING
D43 (Delclos/Gimeno) 09/01/12 - 08/31/17 1.92 calendar
NIH/Fogarty International Center $1,747,386
Global Health Innovation Postdoctoral Training for Central America and Colombia
This 5-year postdoctoral research training proposal builds on almost 20 years of collaboration between the
University of Texas School of Public Health and academic institutions in Latin America, taking it in a new
direction. We will fund and mentor three postdoctoral trainees per year, through a competitive call for
innovative, trans-disciplinary pilot research projects focused on interventions to decrease the burden of
musculoskeletal and environmentally-related toxicological disorders in Central America and Colombia.
Participating institutions will be, on the U.S. side, the University of Texas Health Science Center at Houston
Schools of Public Health and Biomedical Informatics and the University of Houston College of Engineering;
from Colombia, the Pontificia Universidad Javeriana and the Universidad de Antioquia; from Central America,
SALTRA, a network of seven universities and research institutions.

1P20 (Gimeno) 09/01/12 - 08/31/14 0.48 calendar
CDC / NIOSH $100,000
Colombia-Texas GEOHealth Hub CollaborativeBuilding on previous collaborative work between UTSPH and
Pontificia Universidad Javeriana (PUJ) Center for Ergonomic Studies in Colombia, this proposal focuses on
workplace safety and industrial hygiene, ergonomics and human factors and the psychosocial environment.
During the project period, we will: (1) assess the needs and opportunities, including information and
infrastructure capabilities, in the selected EOH areas in Colombia, in order to identify both the research and
training priorities and the appropriate Hub partners; (2) identify high-quality, motivated, nationally recognized
active groups within prestigious local institutions of higher learning, governmental departments and relevant
private stakeholders, increasing the potential for the proposed GEOHealth Hub’s success; (3) develop an
activities program and strategic plan, along the selected EOH spectrum that emphasize the greatest
applicability to future policy and program development; and, (4) prepare an evaluation and benefits plan
demonstrating the potential improvements towards building and sustaining capabilities.

1R03 (Alamgir) 04/01/2012 - 03/31/2014 0.96 calendar
CDC / NIOSH $49,989
BMI and Occupational Injury: are there differences and disparitiesThe specific aims of this project are to 1.)
Determine the association of obesity and the risk of workplace injury; 2.) Investigate the association of obesity
and payer of treatment expenses; 3.) Determine the relationship of obesity and receipt of worker’s
compensation benefits; 4.) Determine whether the association of workplace injury and BMI vary by
demographic, work-related, and other health conditions.

R21 (Fernandez-Esquer) 04/01/12 - 03/31/14 0.84 calendar
NIH $122,663
Tu Seguridad Eres Tu: A Safety Awareness Program for Latino Day LaborersIn Texas, where most
construction workers are Latino Day laborers (LDD), 133 construction workers died on the job in 2009 — one
death every 2.5 days. This study will develop and test an innovative, culturally-tailored multi-level intervention
to effectively recruit and train LDL to increase their awareness of injury risk at work and of NIOSH-based
safety standards consistent with NORA priorities for the construction sector. A total of 165 LDL will complete a pretest survey and will be enrolled in the pilot intervention program. LDL promotoras will deliver a brief, face-to-face intervention to increase awareness of safety risks at work.

OVERLAP
None

GOODRIDGE, Lawrence D.

ACTIVE
2009-01984 (Goodridge) 10/01/09 - 09/30/13 1.80 academic
USDA/NIFA $1,084,429 0.60 summer
Quantifying Microbial Risks During Growth of Produce
The major goals of this project are to conduct research, and outreach related to the development of commodity specific quantitative risk assessments that will be used to identify production practices that may lead to increased risk of produce contamination and exposure to the consumer. An emphasis will be placed on quantifying risks at time points as close to produce consumption as possible.
Role: PI

2009-01208 (Goodridge) 09/01/08 - 08/31/12 1.80 academic
USDA/NIFA $1,667,679 0.60 summer
Risk Assessment of Sampling Methods for Evaluating the Microbial Safety of Fresh Produce
The major goal of this project is to develop rapid and cost effective water concentration methods that can efficiently concentrate food-borne pathogens from water, and to couple the concentration methods with downstream detection methods to develop integrated sampling and detection methods capable of reliably testing produce water for food-borne pathogens.
Role: PI

(Goodridge) 05/01/10 - 04/30/12 2.00 academic
Colorado OEDT $32,270
A Multiangle Light Scattering Biosensor for Rapid Detection of Waterborne Viruses
The major goal of this project is to develop a rapid method to detect enteric viruses in drinking water.
Role: PI

(Goodridge) 05/01/10 - 04/30/12 1.00 summer
Louisiana State University $109,763
Rapid Concentration and Detection of Enteric Viruses in Seawater
The major goal of this project is to develop rapid methods to detect enteric viruses at oyster production beds.
Role: PI

PENDING
Center for Produce Safety (Goodridge) 01/01/12-12/31/14 0.75 academic
Development Research Grant (R21) $240,000 0.25 summer
Assessing spatial heterogeneity of microbial contaminants in fields and on produce: Implications for science-based sampling strategies and informed decision-making for food safety.
The objective of this research is to develop new, sciences based sampling strategies to better test for the presence of foodborne pathogens during fresh produce production.
Role: PI

OVERLAP
None
KEEFE, Thomas. J.

ACTIVE
NIH/NIAID (Beaty) 08/01/10 - 07/31/15 0.75 academic
Sustainable Control of Ae Aegypti and $518,857 0.25 summer
Epidemic Dengue
The major goals of this project are to: a) demonstrate the effectiveness of a "public health" Casa Segura for the sustainable control of Ae. aegypti and dengue in a large urban center; and b) determine if protection of homes by LL-ITMs (Casa Segura) is adversely affected by or promotes the evolution of pyrethroid resistance.

1 R21OH010050-01A1 (Volckens/Henry) 07/01/11 - 06/30/13 0.11 academic
CDC $118,368 0.04 summer
Development of a Microfluidic Paper Analytical Device (uPAD for Airborne Metals)
The primary objective of this research is to develop new technology to characterize personal exposure to airborne metals in the workplace.

PENDING:
NIH (Volckens) 01/01/12 - 12/31/13 0.18 academic
Development Research Grant (R21) $149,851 0.09 summer
A Portable Spectrometer for Inhalable Aerosol Size Distributions
The objective of this research is to develop new, inexpensive technology to characterize the size distribution of inhalable aerosol hazards in the workplace.
Role: Co-Investigator

HHS-CDC-Centers for Disease Control (Volckens) 08/01/12 - 07/31/16 0.36 academic
Research Project Grant (R01) $294,524 0.12 summer
Design, Evaluation, & Validation of a Next-Generation Inhalable Aerosol Sampler
This project will develop a low-cost, easy to use, disposable particle sampler that estimates how much dust is inhaled by a worker.

OVERLAP
None

Lamm, W. Dennis

ACTIVE
5-313890 (Lamm) 10/01/11 - 12/31/12 0.08 academic
Western SARE $15,000 0.33 summer
Colorado State Coordinator for Sustainable Agriculture
The major goals of this project are to raise awareness of the principles of sustainable agriculture primarily among the agriculture population of Colorado, and to disseminate information about grant opportunities provided through the Western Region Sustainable Agriculture, Research and Education (WSARE) program headquartered at Utah State University.
Role: PI – responsible for overall leadership and implementation

PENDING
None

OVERLAP
None
NONNENMANN, Matthew

ACTIVE
1K01OH009674-01A1 (Nonnenmann) 08/01/10 - 07/31/13 6.0 calendar
CDC/NIOSH $325,997
Measures of Dust, Endotoxin, and Exhaled Nitric Oxide Among Dairy Farm Workers
The goal is to that the results of this study will have a significant impact on understanding the exposures that these large herd dairy farm workers experience, and provide insight into areas where potential interventions may be developed.

2U54OH007541-11 (Levin) 09/30/11 - 09/26/12 2.4 calendar
CDC/NIOSH/UTHSC-Tyler $110,000
Educational Approach to Increase Respirator Use among Broiler Chicken Growers
The goal of this project is to assess the effectiveness of an educational intervention to increase respirator use among broiler chicken growers.

PENDING
None

OVERLAP
None

PETERSEN, Kathy M.

ACTIVE
5T42OH009229
CDC/NIOSH (Newman UCDHSC) 07/01/11 - 06/30/15 3.11 calendar
Mountains and Plains Education Research Center $877,660
Graduate training support for occupational medicine, industrial hygiene, ergonomics, health physics, and occupational health psychology; other sections also include continuing education, diversity, and outreach.
Role: Accounting Technician III

PENDING
None

OVERLAP
None

POOLE, Jill

ACTIVE
1R01ES019325-01 (Poole) 07/01/10 - 06/30/15 6.0 calendar
DHHS/NIH/NIEHS $328,327
Role of pattern recognition receptors in organic dust-induced airway inflammation
The goals of this award are to: Aim 1: Determine the time course and reversibility of NOD2 expression by antigen presenting cells with organic dust exposure and the signaling pathways responsible for its expression.
Aim 2. Define the functional role of NOD2 and TLR2 in modulating antigen presenting cell activation following stimulation with organic dust exposure in knock-out mice in vitro and in vivo.
Aim 3. Investigate whether mice deficient in NOD2 or TLR2 exhibit altered susceptibility to airway disease induced by organic dust exposure.
Reynolds, Stephen J.

5K08ES015522-05 (Poole) 05/15/07 - 04/30/13 0.60 calendar
DHHS/NIH/NIEHS $182,782

Chronic Innate Immune Adaptation to Organic Dust
The goals of this award are to: **Aim 1:** Characterize and establish the specific inflammatory mediators involved with repeat versus single organic dust exposure in monocytes. **Aim 2:** Determine the mechanisms of repeat versus single organic dust-induced inflammation focusing on protein kinase C activation in monocytes. **Aim 3:** Determine the role of specific inflammatory mediators and PKC activation using an *in vivo* model of repeat versus single organic dust exposure in mice.

2R01OH008539-06 (Romberger) 08/01/10 - 07/31/15 0.60 calendar
DHHS/CDC/NIOSH $319,030

Targeting Airway Inflammation from Concentrated Animal Feeding Operation Dust
This project investigates the cellular and molecular basis for the airways disease that occurs in swine confinement facility workers.

1U54OH010162-01 (Rautiainen) 09/01/11 - 08/31/16 0.60 calendar
DHHS/CDC/NIOSH $645,208

Central States Center for Agricultural Safety and Health (CS-CASH)

(Poole) 11/01/11 - 10/31/12 0.12 calendar
Foundation of the ACAAI $50,000

The Role of Vitamin D in Chronic Urticaria and Angioedema Treatment

**PENDING**
None

**OVERLAP**
None

Quijano, Louise M.

**ACTIVE**
None

**PENDING**
None

**OVERLAP**
None

Rosecrance, John C.

**ACTIVE**
5 T42 OH009229 (Newman UCDHSC) 07/01/11 - 06/30/15 1.10 academic
CDC/NIOSH $158,081 0.37 summer

Mountain and Plains Education Research Center - Ergonomics
The major goal of this project is graduate training support for occupational medicine, industrial hygiene, ergonomics, health physics, and occupational health psychology. Continuing education and outreach. Role: PI
U60-OH009762 (sub with CPWR) 09/01/11 – 08/31/12 1.35 academic
NIOSH $145,852 0.45 summer
Enhancing Safety through Leadership
The major goal of this proposed study is to identify and validate the effective leadership skills considered critical to safety in the construction industry.
Role: PI

OVERLAP
None

TELLECHEA, Teresa

ACTIVE
None

OVERLAP
None

VOLCKENS, John

ACTIVE
1 R01ES020017-01A1 (Volckens/Peel) 01/15/12 – 10/31/16 1.80 academic
HHS/NIH/NIEHS $328,610 0.60 summer
The Commuter Exposure Study: Linking Exposure, Source-Receptor Models, and Health
The objective of this research is to apply innovative modeling and exposure assessment techniques to improve our understanding of the impact of traffic-related air pollution on human exposure and health.

1 R21OH010050-01A1 (Volckens/Henry) 07/01/11 - 06/30/13 1.30 academic
CDC $118,368 0.43 summer
Development of a Microfluidic Paper Analytical Device (uPAD for Airborne Metals)
The primary objective of this research is to develop new technology to characterize personal exposure to airborne metals in the workplace.

1 R21ES019264-01 (Volckens/Henry) 08/01/10 - 07/31/12 0.46 academic
HHS/NIH/NIEHS $150,000 0.15 summer
A Portable, Fast Sensor for Oxidative Capacity of Particulate Air Pollution
The goal of this project is to develop novel sensing chemistry to rapidly assess the ability of freshly collected
atmospheric aerosols to cause oxidative stress in biological systems. We propose to design and validate of a novel sensor for oxidative load that combines advantageous aspects of microfluidics with a new aerosol collection system.

CNH1016734-CSU-07222011 (Volckens) 05/16/11 - 06/15/12 0.75 academic
RJ Lee Group, Inc. $48,730 0.25 summer
Development of Personal Sampling Technology for Nanoparticle Exposure Assessment
The objective of this project is to complete the design of a commercial prototype thermal precipitator for measurement of nanoparticle exposures in air.

2 U54OH008085-08 (Volckens) 09/15/11 - 09/14/16 0.45 academic
HHS-CDC-Centers for Disease Control - NIOSH $122,404 0.15 summer
Pilots/Feasibility/Emerging Issues (High Plains Intermountain Center for Agricultural Health and Safety)
The objective of this work is to develop and distribute the annual RFP, coordinate and facilitate the proposal review process for pilot/feasibility projects for the High Plains Center for Agricultural Health and Safety.

2 U54OH008085-08 (Reynolds) 09/15/11 - 09/14/16 0.90 academic
CDC/NIOSH $264,787 0.30 summer
HiCAHS - Bioaerosol Exposures and Models of Human Response in Dairies and Cattle Feedlots
The objectives of this research are to apply powerful new tools to characterize bioaerosols in dairies and cattle feedlots and to compare three approaches for studying the pro-inflammatory effects of bioaerosols in the lung.

PENDING
NIH (Volckens) 06/01/12 - 5/31/14 1.40 academic
Development Research Grant (R21) $149,851 0.56 summer
A Portable Spectrometer for Inhalable Aerosol Size Distributions
The objective of this research is to develop new, inexpensive technology to characterize the size distribution of inhalable aerosol hazards in the workplace.
Role: PI

HHS-CDC-Centers for Disease Control (Volckens) 08/01/12 - 07/31/16 1.12 academic
Research Project Grant (RO1) $294,524 0.38 summer
Design, Evaluation, & Validation of a Next-Generation Inhalable Aerosol Sampler
This project will develop a low-cost, easy to use, disposable particle sampler that estimates how much dust is inhaled by a worker.
Role: PI

HHS-CDC_NIOSH (Serdar-CSPH) 03/01/12 - 02/28/13 0.18 academic
Development Research Grant (R21) $4,230 0.06 summer
PAH Exposure and DNA Damage in Roofers
The objective of this research is to compare markers of oxidative DNA damage in workers exposed to bitumen fumes during roofing. The CSU sub-project will develop a sampling protocol for personal exposure assessment to gas and vapor-phase PAH.

NSF (Volckens/Marchese) 10/01/12 - 08/31/15 0.45 academic
Environmental Health and Safety of Nanotechnology $85,605 0.15 summer
A Thermophoretic Sampler for Quantitative Identification of Engineered Nanomaterials in Air
The objective of this research is to develop personal sampling technology for the identification and quantification of biogenic, incidental, and engineered nanomaterials in air.

OVERLAP
None
1. PROGRAM INCOME (See instructions.)
All applications must indicate whether program income is anticipated during the period(s) for which grant support is requested. If program income is anticipated, use the format below to reflect the amount and source(s).

<table>
<thead>
<tr>
<th>Budget Period</th>
<th>Anticipated Amount</th>
<th>Source(s)</th>
</tr>
</thead>
</table>

2. ASSURANCES/CERTIFICATIONS (See instructions.)
In signing the application Face Page, the authorized organizational representative agrees to comply with the policies, assurances and/or certifications listed in the application instructions when applicable. Descriptions of individual assurances/certifications are provided in Part III of the PHS 398, and listed in Part I, 4.1 under Item 14. If unable to certify compliance, where applicable, provide an explanation and place it after the Progress Report (Form Page 5).

3. FACILITIES AND ADMINISTRATIVE (F&A) COSTS
Indicate the applicant organization’s most recent F&A cost rate established with the appropriate DHHS Regional Office, or, in the case of for-profit organizations, the rate established with the appropriate PHS Agency Cost Advisory Office.

- DHHS Agreement dated: 06/28/2011
- No Facilities and Administrative Costs Requested.
- No DHHS Agreement, but rate established with __________ Date __________

CALCULATION*

See attached spreadsheet x Rate applied spreadsheet

\[
\text{Entire proposed budget period: Amount of base} \times \text{Rate applied} = \text{F&A costs} = 369,304
\]

Add to total direct costs from Form Page 2 and enter new total on Face Page, Item 8b.

*Check appropriate box(es):
- Salary and wages base
- Modified total direct cost base
- Off-site, other special rate, or more than one rate involved

Explanation (Attach separate sheet, if necessary):
Please see attached spreadsheet for the amount of base and F&A rate for each budget.
<table>
<thead>
<tr>
<th>IDC from Checklists</th>
<th>Indirect Rate</th>
<th>Amount of Base</th>
<th>Directs</th>
<th>Indirects</th>
<th>Consortium Indirects</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin/Planning</td>
<td>31.3%</td>
<td>$ 134,298</td>
<td>$ 134,298</td>
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**$425,740**
Program Director/Principal Investigator (Last, First, Middle): Reynolds, Stephen

ALL PERSONNEL REPORT

Place this form at the end of the signed original copy of the application. Do not duplicate.

Always list the PD/PI(s). In addition, list all other personnel who participated in the project during the current budget period for at least one person month or more, regardless of the source of compensation (a person month equals approximately 160 hours or 8.3% of annualized effort). Use Cal (calendar), Acad, or Summer to enter months devoted to project.

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<tr>
<th>Commons ID</th>
<th>Name</th>
<th>Degree(s)</th>
<th>SSN (last 4 digits)</th>
<th>Role on Project (e.g. PD/PI, Res. Assoc.)</th>
<th>DoB (MM/YY)</th>
<th>Cal</th>
<th>Acad</th>
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<td>PP3 - Ayers (LITEENN)</td>
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