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## **Small Study Program Guidelines**

*Instructions for applying*

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# INTRODUCTION

## About the Small Study Program

CPWR – The Center for Construction Research and Training initiated the Small Study Program in 1993 with a three-part mission: to serve as a vehicle to bring new investigators into the field of construction safety and health research; to help define problems, investigate targeted research priority areas, and test innovative solutions; and to identify opportunities for strategic policy changes. Over the years, funded small study projects have encompassed diverse scientific aims, investigators, and applicant organizations.

Applicants are encouraged to review CPWR’s [current research program](#) and [previously funded Small Study projects](#) before making a decision on a topic area for proposed investigation.

The Program operates on a rolling admission: a study can be proposed at any time, pending the availability of funds. For a study to be considered, applicants must follow both the program guidelines and the application procedures.

Successful applicants may receive up to \$30,000 for a one-year study on a discrete topic. The research plan proposed by the researcher must be related to CPWR’s mission and the construction safety and health research priority areas listed in this document.

# BACKGROUND

## About CPWR

CPWR – The Center for Construction Research and Training is a 501(c)(3) not-for-profit organization created for the primary purpose of improving working conditions in the U.S. construction industry. CPWR’s mission aligns with the goals of the National Institute for Occupational Safety and Health (NIOSH). As stated in its Articles of Incorporation, CPWR’s purpose is “to encourage the elimination or reduction of conditions constituting hazards to the health or safety of workers, and to promote the maintenance and improvement of safe and healthy working conditions for workers”.

For the last 30 years, CPWR has established priorities for and operated the NIOSH-supported National Construction Center, which is dedicated to improving safety and health performance in the U.S. construction industry. During this period, CPWR has built a multidisciplinary, productive integrated research team, outstanding multilevel industry relationships, and an extensive record of major achievements. Today, CPWR is recognized worldwide as a pre-eminent institution in this field.

CPWR competes every five years for a CDC/NIOSH cooperative agreement to serve as the National Construction Center, which is part of NIOSH’s overall construction research program. The NIOSH cooperative agreement funds the work of CPWR’s in-house researchers and a consortium of university-based researchers, as well as this Program.

Awarded a new cooperative agreement to continue as the National Construction Center through 2024, CPWR remains focused on reducing injuries and illnesses in the construction industry by:

- Building on our current base of knowledge to intensify and accelerate the identification and adoption of evidence-based best practices;
- Responding to the National Occupational Research Agenda for Construction, NIOSH strategic goals, and the 2018 NIOSH Construction Program Expert Panel Review;
- Building on current construction safety climate work;
- Continuing leadership roles on Research to Practice (r2p), with a focus on building partnerships and conducting translation research;
- Tracking changes in the industry, including trends in U.S. employer policies, programs and practices, and evaluating changes in safety and health outcomes;
- Serving as a national repository and resource for construction safety and health information and providing support services for industry data and statistics; and
- Responding to emerging issues and trends in the construction industry.

### **The Need for Research**

U.S. construction workers face one of the country's highest risks for injury, illness, or fatality due to workplace hazards. Their fatality rate is three times greater than the average for all private industries, and their rate of injuries involving days away from work is 44% higher. Occupational injuries and fatalities create a significant human and financial burden for workers, the industry, and society. It is estimated that on average, one fatality costs the construction industry \$4 million and one nonfatal injury involving days away from work costs \$42,000. Workers employed by construction employers with fewer than 20 employees are at a disproportionate risk compared to those working for larger employers. While these small employers account for only 37% of the construction workforce, they are responsible for 67% of the fatalities. To reduce the risks, particularly for small employers and their employees, there is a critical need to accelerate implementation of evidence-based work practices and interventions shown to improve occupational safety and health outcomes.

The complex nature of the construction industry, particularly the predominance of small, often isolated and under-resourced employers, creates challenges for reaching and influencing employers' and their employees. Dangers to the lives and health of workers are immediate, and health effects can be cumulative, disabling, and even fatal.

- Out of 4,779 worker fatalities in all industries during calendar year 2018, 1,008 or 21.1% were in construction according to the [Bureau of Labor Statistics](#). In other words, one in five worker deaths last year were in construction.
- Falls were the leading cause of worker deaths on construction sites, followed by electrocution, struck by object, and caught-in/between (usually involving vehicles, heavy equipment, and road construction). These "Fatal Four" were responsible for more than half (58.6%) of the construction worker deaths in 2018, according to the Bureau of Labor Statistics. Eliminating hazards associated with the "Fatal Four" could save nearly 600 lives every year.

- Construction products contain chemicals and other compounds that can damage brain function, the nervous system, sexual function, and the liver and other internal organs. Some of these adverse health outcomes can show up years after initial exposure.
- Workers can experience debilitating pain and functional limitations due to repetitive stress, back injuries or other musculoskeletal disorders.
- Construction workers can easily develop respiratory ailments from breathing vapors, dusts, gases, and fumes on work sites. Inhaling contaminants can lead to moderate-to-severe lung disorders, including work-related asthma, COPD, silicosis, and cancers.
- Allergic reactions and sensitization to construction materials can force a worker to leave the trade, as well as have lasting negative health effects.

While CPWR seeks to inform contractors and workers about hazards and prevention measures, construction employers are tasked with ensuring worker safety by providing proper equipment and training workers in its use. A contractor who does not understand relevant hazards or chooses to ignore them puts workers' lives at risk. Therefore, dissemination of research results to groups that can affect positive change is a CPWR priority, as is Research to Practice (r2p) and the study of an organization's "safety culture" and "safety climate" on a construction site.

## **RESEARCH GOALS AND AREAS OF EMPHASIS**

In line with the overarching goals of CPWR, the Small Study Program encourages researchers with an interest in improving construction worker health and safety to apply. Research projects relevant to targeted areas identified for the construction sector by the [NIOSH strategic goals](#), [National Occupational Research Agenda for Construction](#), and the [2018 NIOSH Construction Program Expert Panel Review](#) are considered fundamental for sustaining the quality, breadth, and relevance of this Program.

The scope of the research should include one or more of the following: basic or applied science, development or exploratory methodologies, prevention effectiveness or intervention, Research to Practice (r2p), technology transfer, or feasibility and policy research. Specific objectives of proposed research might test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm or clinical practice, address a critical barrier to progress in the field, or develop new technology. Research may aim to investigate causes of fatal and nonfatal construction injuries and illnesses or to seek solutions to reduce or eliminate the associated hazards.

CPWR encourages investigators from a wide range of disciplines (applied computer sciences, communication sciences, construction management, consumer marketing, economics, engineering, psychology, and work organization) to apply. It welcomes innovative proposals from occupational safety and health researchers, ergonomists, epidemiologists, researchers partnering with industry practitioners, and others.

CPWR is particularly interested in studies focused on the following areas:

- Best practices for advancing the adoption of research findings on construction sites – Research to Practice (r2p) - and ways to overcome the barriers for intervention adoption

- Emerging issues and new technologies
- Safety culture and safety climate
- Safety and health information dissemination to specific audiences
- Innovative or new directions in construction sciences that may result in positive safety and health outcomes
- High-risk sectors (small employers, vulnerable workers, residential and light commercial construction)
- Preconstruction audiences, as there is a growing evidence base that suggests construction owners, architects, and engineers can have significant influence on jobsite safety and worker health.

### **A Focus on Small Employers**

CPWR has a particular interest in reducing the high fatality rate among small employers -- defined by CPWR as those with one to 19 employees -- in the U.S. construction industry. Small employers hire approximately one-third of the construction workforce and experience two-thirds of the fatalities. Further, 91% of all construction establishments in the United States have between 1 to 19 workers, while only 1% employ 100 or more workers.

Small employers are less likely to embrace essential safety practices and are slow to adopt new approaches to occupational safety and health. Small employers, especially those that hire immigrant and self-employed workers, lag far behind in terms of adopting even the basic essential elements of good safety management practices. CPWR encourages studies with the aim of exploring innovative ways to reach small employers.

### **Proposals Not Eligible for Small Study Program Funding**

CPWR considers any proposal addressing the [NIOSH strategic goals](#), [National Occupational Research Agenda for Construction](#), and the [2018 NIOSH Construction Program Expert Panel Review](#) recommendations as responsive. CPWR will not consider proposals that could lead to opportunities for employers to discriminate against workers.

## **HOW TO APPLY FOR FUNDING**

A study may be proposed at any time. However, a researcher serving as principal investigator of a proposed study is limited to two letter of intent submissions per calendar year. The funding ceiling for a project with a 12-month or less performance period is \$30,000 in total costs. Application procedures are detailed below.

The study must address at least one [NIOSH strategic goals](#), [National Occupational Research Agenda for Construction](#), or the [2018 NIOSH Construction Program Expert Panel Review](#) recommendations.

## Letter of Intent

To propose a study, applicants should submit a Letter of Intent (LOI) of no more than four (4) pages. The letter must include the following headings:

- Applicant organization's legal name, Employer Identification Number, and DUNS number.
- Principal Investigator's legal name, credentials, and contact information.
- Statement of the problem.
- The [NIOSH strategic goals](#), [National Occupational Research Agenda for Construction](#), or the [2018 NIOSH Construction Program Expert Panel Review](#) recommendation being addressed.
- Summary of the proposed study, including aims and objectives, methods, research/design, and selected references showing how the study contributes to knowledge in the field.

Below are questions to consider:

- What are the expected outcomes/products?
- How will the outcomes be measured?
- What does the investigator expect to find? What might be next?
- What are the dissemination plans?
- What is the proposed timetable (no more than 1-year) and estimated budget for the proposed project?
- What partnerships and plans will help obtain access to workers/worksites?
- What is the plan for human subjects' protection?

Submit the LOI electronically to Trish Quinn at [pquinn@cpwr.com](mailto:pquinn@cpwr.com). Letters not following these instructions will be returned and not reviewed. There is no opportunity to revise and resubmit an LOI.

## Letter of Intent Review Procedure

LOIs submitted for consideration will be reviewed by an internal CPWR panel, as designated by CPWR's executive director. When the reviews are complete, the CPWR executive director will assess reviewers' scores/comments and decide whether to proceed with a request for a proposal. If not accepted, there is no opportunity to revise and resubmit the LOI. If accepted, the investigator will be invited to submit a [PHS 398 application](#). The proposal is due 45 business days from the CPWR request.

## PHS 398 Application

CPWR uses the most current version of the [U.S. Public Health Service 398 grant application](#) (PHS 398). Instructions for Grant Applications using PHS 398 can be found at

<https://grants.nih.gov/grants/funding/phs398/phs398.pdf>. Applications not following these instructions will be returned to the investigator and will not be reviewed.

- The proposal must include all forms and sections identified in the PHS 398 Table of Contents.
- The summary section must include the NIOSH Strategic Goals, National Occupational Research Agenda for Construction, or 2018 Expert Panel Review recommendations the study will address.
- A research output must be clearly identified in both the Abstract and Research Strategy section.
- The proposal must be submitted electronically as one PDF file to Trish Quinn at [pquinn@cpwr.com](mailto:pquinn@cpwr.com).
- After the review, CPWR may request a one-time revision to a proposal. The investigator has 30 business days to address any questions/comments and to resubmit the proposal.

### **Limitations of Funding**

- Total Funding. Funding is capped at \$30,000 including any indirect costs. A detailed and justified budget on PHS 398 form pages is required. If an award is made, no changes to the submitted budget can be made without prior written approval from CPWR.
- Facilities and Administration. Indirect costs are limited to 25% of the personnel (salary and fringe benefit) costs only.
- Travel. Any travel costs directly related must be detailed, justified and included in the budget. Travel expenses must conform to the Applicant's (if an institution) or CPWR's travel policy, whichever is applicable; however, no travel expenses in excess of what the federal government would reimburse its own employees will be reimbursable. International travel is not an allowable expense.
- Equipment. No equipment with a per unit price of more than \$1,000 is allowable.

### **Human Subjects**

- Human subject plans must be included in the Research Plan. If the study involves human subjects or uses data that includes personal identifiable information, the investigator is required to obtain approval from an Institutional Review Board (IRB) recognized by the Office of Human Research Protections, U.S. Department of Health and Human Services.
- Because the proposal is for research, any inclusion of human subjects, whether in a laboratory or a worksite setting, must have IRB review. While some studies may be exempt, that exemption must be determined by the IRB, not the PI. Documentation is required.
- Human Subjects Protection Training certificates, preferably CITI training, are required to be included in the application for all individuals involved in human subject research studies (exempt and non-exempt) who have contact with subjects or their identifiable information. Training certificates are valid for five years.
- CPWR's IRB chair will conduct a secondary review of the human subjects plan as well.

## REVIEW OF THE PROPOSAL

All submissions are reviewed by scientists and experts from CPWR, NIOSH, and CPWR's Technical Advisory Board. External subject matter experts may also be included on the review panel based on their experience and knowledge of the applicant's field. The proposals are generally reviewed within 45 business days of receipt.

### Review Criteria

The following review criteria are considered:

1. Significance/need:
  - a. Does the research project address an important problem?
  - b. Are the applicable NIOSH Strategic Goals, NORA Construction Sector Council Priorities, or 2018 Expert Panel Review recommendations addressed, and are they relevant to CPWR's overall objectives?
  - c. Have any stakeholders, such as labor-management organizations, expressed a need for research on the proposed topic? How/where is this need documented?
  - d. Are the proposed core component functions clearly defined and essential for achieving the study goals and supporting individual research projects?
  - e. If the applicant achieves the aims of the application, how will the aims advance scientific knowledge?
  - f. What are the expected impacts on occupational injury or illness risks?
  - g. Could the findings or future tools/products generated by the research be used to discriminate against or impact individual worker's employment opportunities?
2. Approach:
  - a. To what extent are the conceptual framework or theory of change, design, methods, and analyses adequately developed, well-integrated, well-reasoned, and appropriate to achieve the aims of the project?
  - b. If a data set is to be analyzed, is it likely to produce the information sought? Is it the best source for the questions posed? Does the applicant identify and discuss data limitations?
  - c. Does the applicant acknowledge potential problem areas and consider alternative tactics?
3. Innovation:
  - a. Does the proposal challenge existing thinking, offer a new approach or technology to solve the stated problems?
  - b. Is the proposal original and innovative?
4. Investigators:
  - a. Is the applicant well-qualified through academic and practical experience to examine the topic?
  - b. Is it likely the investigator will complete the study in a timely manner?
  - c. Does the investigative team bring complementary and integrated expertise to the project?

5. Environment:
  - a. How well does the physical/scientific environment in which the applicant will do the work contribute to the probability of success?
  - b. Is the commitment of the institution evident and adequate to support the study in terms of space, resources, or administrative authority?
  - c. Does the location of the study within the Application's organization provide the authority to facilitate multidisciplinary work for investigators across departmental lines or across schools in the university environment?
  - d. Are partners from public and private organizations engaged? Did these organizations provide letters of support that describe their role and the extent of their participation?
  
6. Balance:
  - a. How does the study fit with other CPWR research? Does it relate to one of CPWR's current goals or emphasis areas?
  
7. Human Subjects:
  - a. Does the proposal involve human subjects? Are plans for an IRB review included in the proposal?

If reviewers determine that additional details are needed, the investigator will have one opportunity to revise the proposal. Responses to the comments along with a revised proposal are due 30 business days from CPWR's request. Revised proposals will not be accepted if submitted late. Once CPWR has completed its review and if the recommendation is to fund, the proposal will be forwarded to the NIOSH Scientific Program Officer for review. When approved, CPWR will issue an award letter.

## **PROGRESS REVIEW AND REPORTING REQUIREMENTS FOR FUNDED STUDIES**

Onsite visits by CPWR staff or consultants may occasionally be warranted. It is expected, however, that most monitoring can be based on written progress reports submitted periodically to CPWR.

### **Progress Reports**

Short, written progress reports are required during the duration of the study. The reporting timeframe will be included in the funding letter. Funding installments will depend on IRB approval and on submission of satisfactory progress reports.

The progress report must be written in language that is understandable to someone who does not specialize in the field of the research. Abbreviations and language that may not be known to the broader scientific community should be avoided or, if essential, be clearly defined. A progress report should be no more than four (4) pages and include (in this order):

- Objectives/specific aims progress
- Any changes from the original scope
- Accomplishments
- Problems that result in deviation from the methods or timeline
- Any changes in key staff, plans, or methods
- Interim results, including their relevance and practical application, and any problem(s) encountered or anticipated
- Any publications or presentations derived from the study (completed and/or planned)

### **Final Report**

The final report is due 30 business days after the end of the study. The report should be succinct and be no more than fifteen (15) pages and include (in this order):

- Abstract (150 words or less)
- Key findings (at least 5), in order of importance
- Introduction
- Objectives
- Methods
- Accomplishments and results, including their relevance and practical application
- Changes/problems that resulted in deviation from the methods
- Future funding plans. If the findings appear to justify expansion of the research, the investigator(s) should indicate plans for such research and possible sources of additional funding
- List of presentations/publications (completed and/or planned)
- Dissemination plans

The final report and any attachments should be sent electronically (in both MS-Word and as a PDF file) to Trish Quinn at [pquinn@cpwr.com](mailto:pquinn@cpwr.com). CPWR will review the report and, if warranted, provide feedback to the investigator. Clarification and/or revisions may be requested. Failure to submit an acceptable final report will delay the release of final funding installment and may disqualify the investigator from further CPWR funding.

## **Dissemination of Findings**

The investigator(s) is encouraged to present the findings at conferences and to submit them for publication in scholarly journals and the trade press. Publications, journal articles, manuals, etc. are required to include the following acknowledgment/disclaimer:

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CPWR may publish the report as a CPWR report on its website. CPWR may also produce a one-page “Key Findings from Research” document, using the investigators’ abstract and key findings. You may also be asked to present the research findings as part of CPWR’s webinar series.

CPWR will not withhold the report or delay posting/publication solely to accommodate a journal’s requirement that there be no prior publication of the results.

If a journal article, news story or other release of media about the findings is published in print and/or online, we ask that the investigator send a curtesy copy to CPWR.

Investigators are encouraged to pursue standard academic and industry channels as well as new media for disseminating the results of their research. A year after the study is complete, CPWR will reach out to the investigator for an update on dissemination efforts. At that time, we will ask for the journal article/story/posting and any relevant media coverage or reactions from institutions or the public.



