



Office of Extramural Programs Program Report Fiscal Year 2004



Foreword

August 3, 2005

Dear Colleagues,

I am pleased to provide the annual report for the Office of Extramural Programs (OEP), National Institute for Occupational Safety and Health. This fiscal year (FY) was marked by the launching of the Research to Practice (r2p) initiative. Through this Institute initiative, OEP has channeled resources into projects that will have a measurable impact on the occupational safety and health practitioner environment. The r2p effort provided a vision for the NIOSH research agenda, and OEP uses this vision to examine our research, training and management activities.

As we move into FY 2005, OEP will continue efforts to ensure extramural research and training programs have an r2p vision. We will also continue to promote the translation of research products to the practitioner environment.

Best regards,
Michael Galvin, Ph.D.
NIOSH OEP Director

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Background

The National Institute for Occupational Safety and Health (NIOSH) was established in 1970 to conduct research and to make recommendations for protecting worker safety and health in the United States. NIOSH is part of the Centers for Disease Control and Prevention (CDC).

The NIOSH vision:

Delivering on the Nation's promise: safety and health at work for all people through research and prevention.



Extramural Funding Priorities

While the overall mission of NIOSH is to prevent injury, illness, and deaths caused by hazards in the workplace, it cannot accomplish this goal on its own. NIOSH recognizes that extramural scientists have valuable contributions to make to fulfill the NIOSH mission. The creativity and resources available in the scientific community make the extramural program an important component in achieving safe jobs and healthy workers.

NIOSH funds programs that:

- Are relevant to our research priorities
- Are of the highest scientific quality
- Have an impact on worker health and safety

The following sections outline two broad priorities that are taken into consideration when NIOSH makes funding decisions.

NORA

In 1996, NIOSH created the National Occupational Research Agenda (NORA) in collaboration with our partners in academia, government agencies, professional organizations, and private industry. NORA allows NIOSH to focus resources on a coordinated occupational safety and health research agenda. In establishing NORA, NIOSH and our partners created a framework that has guided occupational safety and health research to this day. For more information about NORA, please visit the NIOSH Web site at: <http://www2a.cdc.gov/NORA/default.html>

Table 1 displays the NORA priority research areas.

Table 1 - NORA Priority Areas

Category	Priority Research Area	NORA Code
Disease and Injury	Allergic and irritant dermatitis	N01DE
	Asthma and chronic obstructive pulmonary disease	N02LD
	Fertility and pregnancy abnormalities	N03RD
	Hearing loss	N04HL
	Infectious diseases	N05ID
	Low-back disorders	N06MB
	Musculoskeletal disorders of the upper extremities	N07MU
	Traumatic injuries	N08TI
Work environment and workforce	Emerging technologies	N09ET
	Indoor environment	N10IE
	Mixed exposures	N11ME
	Organization of work	N12OW
	Special populations at risk	N13SP
Research tools and approaches	Cancer research methods and approaches	N14CR
	Control technology and personal protective equipment	N15CT
	Exposure assessment methods	N16EA
	Health services research	N17HS
	Intervention effectiveness research	N18IN
	Risk assessment methods	N19RA
	Social and economic consequences of workplace illness and injury	N20EC
Surveillance research methods	N21SU	

r2p

NIOSH extramural programs are also being driven by an emphasis on “Research to Practice” (r2p). This new NIOSH initiative is focused on the transfer and translation of research findings, technologies, and information into highly effective prevention practices and products which are adopted in the workplace. The goal of r2p is to reduce illness and injury by increasing workplace use of effective NIOSH and NIOSH-funded research findings. In order to achieve this, NIOSH is continuing to work with our partners to focus research on ways to develop effective products, translate research findings into practice, target dissemination efforts, and evaluate and demonstrate the effectiveness of these efforts in improving worker health and safety. For more information on r2p, please visit the NIOSH Web site at:

<http://www.cdc.gov/niosh/r2p/>

Extramural Research Programs

In fiscal year (FY) 2004, NIOSH administered 275 grant and cooperative agreement awards, for a total of \$101,673,042. In a later section of this report, you will find scientific highlights and success stories for select grantee projects. A listing of all grants and cooperative agreements funded in FY 2004 (Tables 6 and 7) can be found in the section following the highlights.

The awards covered a wide range of program areas, including those listed below:

Education and Training

NIOSH conducts a competitive training grant program aimed at increasing the number of professionals and paraprofessionals trained to work in the occupational safety and health field. In FY 2004, NIOSH supported a network of 16 Education and Research Centers (ERCs) and 41 Training Project Grants (TPGs) across the country. Two new ERC programs and two new TPGs were funded in FY 2004.

NIOSH training grants support academic programs that enable students to obtain specialized training in disciplines such as occupational medicine, occupational health nursing, industrial hygiene, occupational safety, and closely related disciplines. In addition, ERCs and some TPGs provide continuing education for Occupational Safety and Health (OSH) professional development for some 30,000 trainees annually. These continuing education programs have a strong impact on the occupational safety and health practitioner environment. ERCs have a regional focus and are able to respond to workplace training needs throughout the country. Because they provide training that is multidisciplinary, ERCs combined with TPGs graduate professionals who are trained to protect workers from exposure to hazards in virtually every aspect of the workplace.

Mining

Despite many technological and work environment advances, mining remains one of the most dangerous occupations in the United States. The fatality rate is six times higher than the national average for other industries. The severity of injuries for mining exceeds all other industries with the highest percentage of lost work days per incident.

Projects funded by NIOSH investigate the broad issues of mining safety and health through population-based or laboratory research. Areas of focus include: (1) powered-haulage equipment injuries; (2) assessment of safety interventions; (3) reduction of injuries from materials handling; (4) hearing loss prevention; (5) diesel exhaust exposure; and (6) other mine safety and health topics. In FY 2004, 10 single focus mining program projects and one multi-disciplinary mining center were funded.

Agriculture

Agriculture consistently ranks as one of the most hazardous industries in the United States. There were approximately 26 deaths per 100,000 workers in the agricultural sector (agriculture, forestry, and fishing) in 1999. The average annual fatality rate for the United States civilian working population for this same time was approximately 5 deaths per 100,000 workers. Of special concern are the children (over 100) killed each year while involved in farm activities.

NIOSH provides funding for outreach, prevention, intervention, education, and research projects to address the nation's agricultural safety and health issues. In FY 2004, 14 single focus agriculture program projects, 6 single focus child agriculture program projects, 1 multi-disciplinary child agriculture center, and 9 multi-disciplinary agriculture centers were funded.

Construction

NIOSH began a program on construction safety and health in 1990. This program developed a national infrastructure to address issues affecting workers in the construction industry. The reduction in traumatic injury rates among construction workers since 1990 suggests that the program has had some impact. Despite these efforts, construction remains one of the industries with a higher rate of work-related injuries than any other industry. Furthermore, the construction fatality rate has not declined over the past decade. The construction environment involves a large number of work settings, numerous small companies, and complex work organization with multiple employers and trades at one worksite. These factors make it a challenge to improve safety in the construction industry.

Projects funded by NIOSH address the complex and evolving health and safety issues in the construction sector. In FY 2004, 5 single focus construction program projects, 1 multi-disciplinary construction program project, and 1 multi-disciplinary construction center were funded.

Health Care

There are nearly 12 million health care workers employed in the United States. Health care workers are at risk of infection from blood-borne pathogens, particularly human immunodeficiency virus (HIV), hepatitis B virus, and hepatitis C virus. Health care workers develop musculoskeletal injuries through the nature of their work, i.e. lifting and assisting patients, working many hours at computers, and maintaining and repairing complex equipment. Many health care workers also work evening shifts, night shifts, or extended work hours.

The intervention, education, and research projects funded by NIOSH address the specific occupational safety and health issues of health care workers. These projects fall mainly into the program categories of Organization of Work, Infectious Diseases, and Musculoskeletal Disorders. In FY 2004, 11 projects that focus on health care workers were funded.

Special Populations

Occupational hazards are known to be distributed differentially, and workers with specific biologic, social, and/or economic characteristics are more likely to have increased risks of work-related diseases and injuries. The relative proportions of these special populations within the U.S. workforce are increasing. It is important to focus on these populations, particularly as they have been largely underserved in the past. Research is needed to define the nature and magnitude of risks experienced, and to develop appropriate intervention and communication strategies.

NIOSH funds projects that focus on the occupational safety and health of special populations such as older workers, youth, women, and minorities. These projects are

cross cutting in that they address a wide variety of occupations and health effects. In FY 2004, 21 projects that focus on special populations were funded.

Surveillance

In collaboration with many of its partners, NIOSH has established surveillance programs to help describe the magnitude of occupational hazards, diseases, injuries and deaths in the United States. These surveillance activities have often documented the Nation's progress in reducing the burden of work-related diseases and injuries. They have also identified many old and new problems that require additional research and prevention efforts. Such efforts include translation into the workplace of successful intervention approaches.

The intended benefit of supporting surveillance programs is to increase the level of prevention activity in the state. Data is collected to estimate the magnitude and trend of the selected occupational conditions. Although significant accomplishments have been made in occupational health and safety surveillance in the United States, there are still data gaps. To address these gaps, NIOSH and collaborators have developed strategic goals for a surveillance program. The goals are as follows:

- Advance the usefulness of surveillance information at the Federal and state level for the prevention of occupational illnesses, injuries, and hazards.
- Strengthen the capacity of state agencies to conduct occupational surveillance.
- Strengthen surveillance of high-risk industries and occupations, and of populations at high risk, including special populations.
- Promote effective occupational health and safety surveillance conducted by employers, unions, and other non-governmental organizations.

In FY 2004, 38 surveillance projects and surveillance research method projects were funded.

World Trade Center

Following the collapse of the World Trade Center (WTC) on September 11, 2001, thousands of responders, both workers and volunteers, provided rescue, recovery, clean-up, and restoration of essential services. In 2002, NIOSH funded two medical screening programs for these responders, one for New York City firefighters, and one for all other responders. These programs have already screened 12,000 firefighters and 12,000 other responders. Results from these screening programs indicate elevated rates of persistent upper and lower respiratory and mental health conditions. Exposure measurements from the WTC site confirm elevated levels of exposure to combustion products and other particulate matter in the period following September 11, 2001.

In November 2003, NIOSH announced a program that will build upon the results of the initial screening programs. This new program will provide follow-up health assessments for the responders through Clinical Centers (CCs). CCs provide patient tracking, clinical screening, basic mental health assessments, patient data management, and referral to physicians for patients requiring follow-up care. Two Data and Coordination Centers will provide study coordination functions, data management support services, and other services. Data from this program will help define the long term health care needs for the responder population, and also provide important information on the consequences of air pollutants, physical stressors, emotional stress, musculoskeletal exertions, and other

occupational and environmental measures.

NIOSH issued the awards in June 2004. The projects will be funded for five years.

Small Business Innovation Research (SBIR)

Small biotechnology firms represent a unique national resource for economic and scientific growth. The SBIR program empowers small firms to convert cutting edge biomedical research into new technology breakthroughs and competitive new products that will benefit public health. With SBIR funding, company scientists can pursue innovative projects for which company support may not be available, and academic investigators can access company resources, thus achieving a partnership with long term financial and scientific benefits. In FY 2004, NIOSH funded 10 SBIR grants. The grants' subject matter ranges from devices for physiologic monitoring of firefighters, to safety and health training for teleworkers.

Office of Extramural Programs

To facilitate and oversee extramural programs, NIOSH has established an Office of Extramural Programs (OEP). OEP is located within the NIOSH Office of the Director in Atlanta, GA. OEP administers grants and cooperative agreements to extramural occupational safety and health researchers.

The OEP mission is:

To lead and support national occupational safety and health programs to reduce work-related injuries and illnesses through diverse quality-driven extramural research, education, and training in collaboration with world-wide partners.

OEP is made up of three main components: Scientific Review; Research and Research Training Program Administration; and Program Analysis/Translation. More information about OEP, including a staff directory, can be found at the following Web site:

<http://www.cdc.gov/niosh/oep/about.html>

In conjunction with OEP, the CDC Procurement and Grants Office (PGO) performs the business and financial administration for extramural grants and cooperative agreements.

In addition to performing the administration of grant awards, OEP conducts outreach activities that enhance the NIOSH relationship with the extramural occupational safety and health community, other CDC centers and institutes, and other federal agencies.

Highlights of FY 2004 outreach activities include:

- NIOSH is committed to increase the diversity of our research applicant pool, our trainees, and our scientific review committees. OEP staff made site visits to several ERCs to discuss strategies for attracting and retaining minority students in the occupational safety and health fields.
- NIOSH participated in the "Faces of a Healthy Future, National Conference to End Health Disparities" in North Carolina.
- NIOSH contributed to the organization and funding of a conference at the University of California, Los Angeles entitled, "The Way We Work and Its Impact on Our Health." The object of the conference was to increase awareness of the effect of workplace stress on health and to explore legislative and public health policies that will encourage a healthier and more productive workplace for everyone.

- In FY 2004, CDC centers and institutes were involved in the implementation of the National Institutes of Health (NIH) Information for Management, Planning, Analysis, and Coordination (IMPAC II) grants management information system for the administration of all extramural research grants. NIOSH OEP has utilized this system for grants administration for a number of years. Throughout the CDC-wide implementation, OEP staff members acted as a resource for other CDC personnel by participating in and conducting training, and by assisting in the resolution of user issues.
- In an effort to streamline the grants process, and provide better customer service to our extramural grantees, CDC has been analyzing and redefining our grants processes. An OEP Senior Scientist has contributed a significant amount of time to this project, and serves as a valuable resource to the redesign efforts.

Looking to the future, OEP plans several outreach activities for FY 2005:

- It is a NIOSH priority to attract talented minorities into occupational safety and health fields, both as researchers and practitioners. NIOSH plans to visit several historically black colleges and universities and to attend meetings of national organizations, including occupational safety and health related organizations and minority-based organizations, to address this important goal.
- OEP review and program staff members plan to attend several national organization meetings to provide information on the NIOSH grant application and review process. Our vision is that this outreach effort will better prepare researchers to apply for and receive NIOSH grant funding.

Life Cycle of a NIOSH Grant/Cooperative Agreement

The work that OEP and our grantees perform follows a standard life cycle. Each year this life cycle tells the story of the birth of our partnerships, and the accomplishments and successes of our extramural partners. The life cycle involves five major phases: (1) program planning; (2) announcement development; (3) application receipt, referral, and two-step peer review; (4) award; and (5) post-award monitoring and closeout. Brief descriptive information about these phases is outlined below. More information on the grants process can be found on the NIOSH OEP Web site at:

<http://www.cdc.gov/niosh/oep/>

(1) Program Planning

NIOSH develops extramural programs based on the NORA agenda, r2p initiatives, congressional mandates, and other emerging occupational safety and health priorities.

(2) Announcement Development

Funding opportunity announcements are developed as a part of the program planning process, and they contain all the information that a potential applicant needs in order to compete for funding. There are two main types of announcements: the Request for Applications (RFA) and the Program Announcement (PA). The RFA targets a specific research area. It is open for one application cycle with a single published application receipt date. The PA is broader in scope, in that it describes a priority research area and allows the applicant to propose a variety of research within that area. A PA is usually open for applications for a three year period, and the application receipt dates follow a

standardized schedule, with three receipt dates per year. Occasionally, a PA will contain one published deadline date per year. It is very important that potential applicants follow all guidance provided in the funding opportunity announcement.

All NIOSH announcements are published in the NIH Guide for Grants and Contracts. The NIH Guide for Grants and Contracts can be found at:

<http://grants1.nih.gov/grants/guide/index.html>

NIOSH also posts all announcements on the OEP Web site at:

<http://www.cdc.gov/niosh/oep/funding.html>

All Federal Agencies are also required to post a synopsis of their announcements on a common Web site. This Web site provides a “one-stop shop” for potential applicants. The synopsis contains a brief description of the program, eligibility information, and a link to the full announcement. This common Web site can be found at:

<http://www.grants.gov/>

NIOSH OEP uses both the grant and cooperative agreement funding mechanisms to provide support. A cooperative agreement is a grant in which Federal personnel maintain significant involvement. (Hereafter in this report both will be referred to as grants.) Activity codes identify categories applied to the funding mechanisms. The activity code is published in the RFA or PA. A potential applicant can discern information about the type of program being funded simply by knowing the definition of the activity code. Table 2 displays a list of commonly used NIOSH funding mechanism activity codes and their definitions.

Table 2 - NIOSH Activity Codes

K01	Research Scientist Development Award
K22	Career Transition Award
R01	Research Project Grant
R03	Small Research Grant
R13	Conference Grant
R21	Exploratory/Developmental Grant
R25	Education Project Grant
R43	Small Business Innovation Research (SBIR) Phase I
R44	Small Business Innovation Research (SBIR) Phase II
T01	Training Project Grants-Graduate
T02	Training Project Grants-Undergraduate
T42	Education and Research Centers
U01	Research Project Cooperative Agreement
U10	Cooperative Clinical Research
U13	Conference Cooperative Agreement
U19	Research Program Cooperative Agreement
U50	Special Cooperative Investigations/Assessment of Control and Prevention Methods
U53	Capacity Building: Occupational Safety/Community Environmental Health
U54	Specialized Center-Cooperative Agreements
U60	Cooperative Agreements in Occupational Safety and Health Research, Demonstrations, Evaluation and Education

Table 3 includes information on each of the NIOSH RFAs and PAs published and/or open for applications in FY 2004.

Table 3 - 2004 NIOSH RFAs and PAs				
RFA/PA Number	Announcement Title	Activity Code	Appl Deadline	
RFAs				
OH-04-001	Neurological Indices of Long Term Solvent Exposure in Workers	R01	12/17/2003	
OH-04-002	Centers for Construction Safety and Health	U54	4/13/2004	
OH-04-003	Incidence of Needlestick and Sharps Injuries and Medical Safety Device Availability/Use Among Non-Hospital Health Care Workers	R01	1/23/2004	
OH-04-004	World Trade Center Responder Health Consortium	U10	1/23/2004	
OH-04-005	Mining Safety and Health Training and Translation Center	R25	1/23/2004	
OH-05-001	Grants for Education Programs in Occupational Safety and Health	T01/T02/T42	7/1/2004	
ES-03-007	Environmental Justice: Partnerships for Communication (co-funded with NIH)	R25	10/17/2003	
PAs				
PA-04-021	Small Grants in Occupational Safety and Health Research	R03	standard-ongoing until 11/23/2006	
PA-04-030	NIOSH Exploratory/Developmental Grant Program	R21	standard-ongoing until 10/2006	
PA-04-038	Occupational Safety and Health Research	R01	standard-ongoing until 11/23/2006	
PAR-04-105	Career Development Grants in Occupational Safety and Health Research	K01	standard-ongoing until 7/2/2006	
PAR-04-106	State-Based Occupational Safety and Health Surveillance	U60	August 6 annually until 2007	
Omnibus 2004-2	Small Business Innovation Research	R43/R44	4/1, 8/1, 12/1/2004	

New Directions

In FY 2005, OEP will be moving into some new areas. Some of these areas relate to new and exciting technologies, as well as the translation of research into practical applications.

Table 4 provides an overview of the new directions in the FY 2005 RFAs and PAs.

Table 4 - 2005 NIOSH RFAs and PAs

RFA/PA Number	Announcement Title	Activity Code	Appl Deadline
RFAs			
RFA-ES-04-007	Environmental Justice: Partnerships for Communication (co-funded with NIH)	R25	1/8/2005
RFA-HD-04-017	Developing Study Designs to Evaluate the Health Benefits of Workplace Policies and Practices (co-funded with NIH)	U01	12/21/2004
EPA-STAR	Nanotechnology Research Grants (co-funded with EPA)	R01/R21	1/15/2005
RFA-OH-05-003	Occupational Exposure Risk Reproduction/Development	R01	1/13/2005
RFA-OH-05-004	Interactive of Risk Factors for Musculoskeletal Disorders	R01	1/14/2005
RFA-OH-05-005	Mining Occupational Safety and Health Research	R01	3/15/2005
PAs			
PA-04-021	Small Grants in Occupational Safety and Health Research	R03	standard-ongoing until 11/23/2006
PA-04-030	NIOSH Exploratory/Developmental Grant Program	R21	standard-ongoing until 10/2006
PA-04-038	Occupational Safety and Health Research	R01	standard-ongoing until 11/23/2006
PAR-04-105	Career Development Grants in Occupational Safety and Health Research	K01	standard-ongoing until 7/2/2006
PAR-04-106	State-Based Occupational Safety and Health Surveillance	U60	August 6 annually until 2007
PAR 05-005	Conference Grants/Cooperative Agreements	R13/U13	3/1, 7/1, and 11/1 annually until 12/16/2007
TBD	Education and Research Centers	T42	around 7/1 annually until 2008
TBD	Training Project Grants, Undergraduate and Graduate Training	T01/T02	TBD
Omnibus 2004-2, 2005 TBD	Small Business Innovation Research	R43/R44	12/1/2004, 2005 TBD
TBD	Transition to Independent Position	K22	TBD

(3) Application Receipt, Referral, and Two-Step Peer Review

Receipt and Referral

NIOSH utilizes the Center for Scientific Review (CSR) at the National Institutes of Health (NIH) as the receipt point for all grant applications. CSR refers the applications to NIOSH based on standard referral guidelines and the RFA/PA specified on the application.

Initial Review for Scientific Merit

The initial review is administered by a NIOSH Scientific Review Administrator (SRA). In the initial review, applications are evaluated by a peer review panel made up of academic and other extramural scientists with recognized expertise. The applications are assigned a priority score, and summary statements outlining the application's strengths and weaknesses are sent to the applicants.

Secondary Programmatic Review

OEP Scientific Program Administrators (SPAs) utilize the results of the initial review to compile a programmatic review package. The SPAs present the review package to the NIOSH Secondary Review Committee which is composed of senior NIOSH scientists (Division Directors, Office and Laboratory Heads). The committee advises the NIOSH and OEP directors on matters relating to the conduct and support of research, training, health information dissemination, and other programs with respect to factors that affect occupational safety and health.

(4) Award

After both review phases are complete, funding recommendations are presented to the NIOSH director for approval. When the director approves an applicant for funding, the award will be completed by PGO.

Success Rate

The success rate is the percentage of reviewed applications that receive funding on a fiscal year basis. It pertains only to those grant mechanism activity codes used in funding research, including R01, R03, R21, U19, and U01. Funding mechanism activity codes used in the funding of other public health activities such as surveillance, communication, and training are not included in the success rate.

The success rate is one of the measures of the viability of the research grants program. Ideally, the success rate should remain fairly stable over several years and should be comparable to rates from other similar funding sponsors. However, as shown in the chart below, the NIOSH success rate has varied significantly over the last nine years and has usually been well below the rate of 30% that is typical of the National Institutes of Health (NIH). In the past four years, the NIOSH success rate has dropped from 31% to 16%. Of special note is the success rate for R01 applications, because they represent the core activity of a research grant program. Although the R01 success rate of 27% in FY2001 was near 30%, it has dropped to 16% in FY2004. The trend of variable and consistently low success rates can be interpreted to mean that NIOSH has a reduced ability to attract talented investigators to fulfill its mission by sustaining a critical research base in occupational safety and health.

One significant impact of the low success rate is on the National Occupational Research Agenda (NORA). NORA identified 21 areas where researchers, employees and employers all agreed that research should be focused in order to address the needs of workers in the United States. Although some strides have been made, the ability of the occupational safety and health research community to address these areas is seriously constrained by the limited numbers of awards, averaging fewer than two new competing awards per NORA area in FY2004. Although each funded project makes an important contribution to filling knowledge gaps, the number of gaps far exceeds the available

resources. Thus, these data highlight the limited ability of NIOSH to support NORA, which was developed to improve safety and health at work for all people.

The success rate is significant to investigators because it is an indicator of the likelihood of funding, which impacts their ability to remain employed to conduct research on occupational safety and health needs. A success rate that is too low will discourage prospective investigators from applying to a NIOSH-sponsored announcement. A low success rate over several years can cause an erosion of the intellectual base that is critically needed to address important occupational safety and health issues. This may be one of the reasons that the number of submitted R01 applications declined from 162 in FY2002 to 124 in FY2004.

There are many factors that affect the success rate, thus causing fluctuation from year to year. These factors include:

- Funding availability
- Size of individual awards
- RFAs published that year by NIOSH
- RFAs published that year by other institutes and centers
- Quality of applications

The following chart displays historical data on NIOSH Success Rates for all research mechanism activities:

NIOSH Grant Funding Success 1996-2004

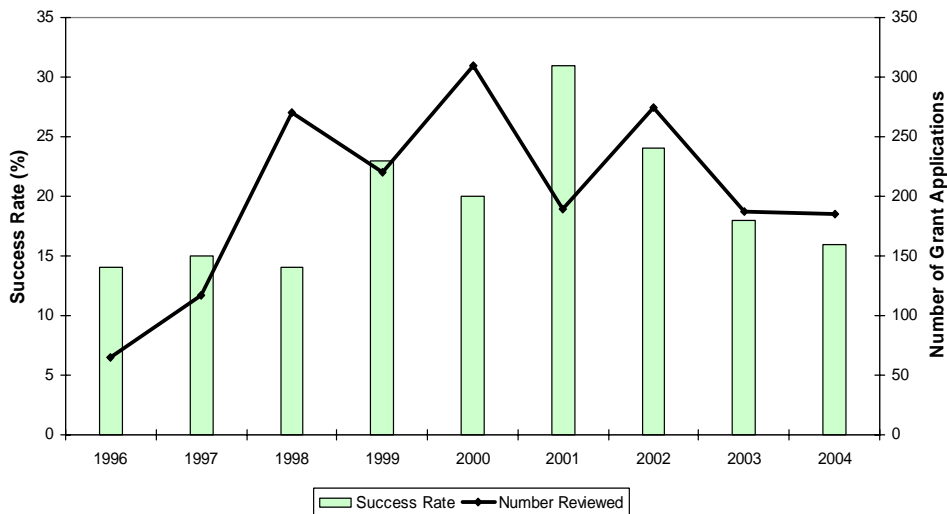


Table 5 displays details on the FY 2004 success rate.

Table 5 – 2004 Success Rates			
Activity Code	Number of Appls	Number of Awards	Success Rate
R01	137	23	16%
R03	48	7	15%
Totals-Overall Success Rate:	185	30	16%

In FY2005 and beyond, NIOSH will focus resources, re-examine research priorities, and adjust the size of awards with a goal of increasing our R01 success rate to at least 20%. Through these measures, NIOSH hopes to sustain the necessary research base for improving the health and safety of the United States workers.

(5) Post Award Program Monitoring and Closeout Program Monitoring

On an ongoing basis, OEP SPAs review the progress of the extramural grant projects.

Closeout

NIOSH is emphasizing impact in both our intramural and extramural research programs. Grantees are being asked to provide information in their final reports on the impact of their project. It is vital to answer the question, “What difference has this project made for worker health and safety?”

Grantee Highlights and Success Stories

As mentioned above, NIOSH grantees submit annual and final progress reports for all grants. Based on the information provided in these progress reports, we are pleased to share the following highlights and success stories. The projects represented in this section display the wide scope of the extramural projects funded by NIOSH.



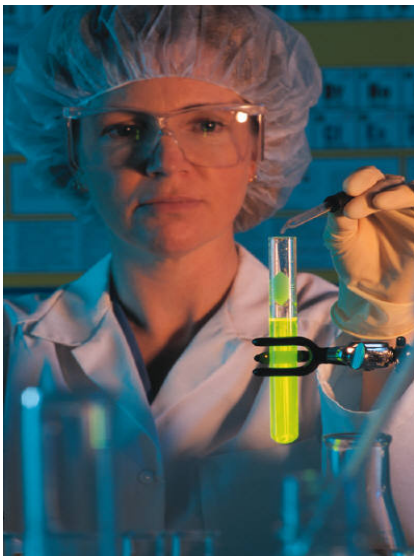
Work Injuries and Illnesses in Older Workers: Causes, Consequences, and Prevention
Grant# 5 R01 OH003937-03
Principal Investigator: Glenn Pransky, M.D.
Institution: University of Massachusetts

More people currently in the United States job force are working past retirement age.

One issue of particular concern regarding older workers is the increased risk of work injury and subsequent disability due to potential age-associated reduction in cognitive function, health, and recuperative ability. Accurate information on the incidence, causes, social, and economic consequences of work-related conditions in older workers is essential to guide public policy. Specific information is needed on effective methods of rehabilitation and re-injury prevention for this segment of the workforce. Unfortunately, little is known about these issues.

The specific aims of this project were: (1) to identify age-related differences in outcomes of occupational injuries and illnesses; (2) to identify characteristics of older workers, workplace organizational issues and other factors that affect outcomes; and (3) to identify interventions that are effective in facilitating return to work and prevention of reinjury in older workers.

Results from a multi-step process and analysis revealed that before injury, older and younger workers had similar health complaints. Approximately 33% of younger workers reported their injury as moderately severe compared to 50% of older workers. Over a third more older workers required surgery than younger, even though the type of injury was similar. Outcomes were similar for both groups, however older workers appeared to have less concerns about return to work than younger workers. Older workers had similar length of lost time, frequency of reinjury, and somewhat less negative financial and social consequences of injury than younger workers. Results indicate that treatment, return to work, and secondary preventive approaches should be tailored to the unique circumstances of an individual older worker. Since strong workplace attachments and return to work support are the determinants of outcome, more important than health and medical care issues, there should be more emphasis on workplace based interventions to improve outcomes after a work injury in older workers. Finally, age by itself does not appear to be a negative factor after a work injury, and there is no evidence from this study that older workers are at higher risk of negative outcomes after a work related injury.



Permeation of Irritant Mixtures Thru Protective Material

Grant# 5 R01 OH003754-03

Principal Investigator: Shane Que Hee, Ph.D.

Institution: University of California, Los Angeles

About 13 million workers in the United States are potentially exposed to skin hazard chemicals, and about a million workers are exposed to machining fluids. There are about 3 million cases per year of chemical dermatitis in the United States. Occupational skin disease represents about 30 to 45% of all occupational illnesses. Worker skin exposure to liquid mixtures rather than single solvents occurs in: pesticide mixing and spraying; crop picking, where pesticide residues are still present; metal working; roofing and road paving; petroleum refining; plastics industry work; semiconductor industry work; hazardous waste remediation and disposal;

are still present; metal working; roofing and road paving; petroleum refining; plastics industry work; semiconductor industry work; hazardous waste remediation and disposal;

and health care work. This study examined the protectiveness of gloves to specific pesticide formulations and to metal working fluids (MWF). A mathematical model to predict the permeation of mixtures containing components irritative to the skin through personal protective clothing was evaluated.

Results indicated that only specific components of the MWFs and pesticide formulations permeated through disposable and chemical-resistant gloves and not all the original components. In all cases, chemically resistant nitrile was more protective than the disposable gloves. However, disposable nitrile gloves appeared to provide adequate protection to aqueous suspensions of pesticides that were ready for spraying in water carrier, and for most MWFs. Permeation by solid forms of pesticides like wettable powders was much lower than for the same pesticides in water carrier. Emulsion concentrate pesticide formulations always permeated faster than did aqueous solutions and solid forms. Partial support was found for the predictive model for permeation.

This study also concluded that the material safety data sheets for pesticide formulations, MWFs, and other mixtures should specify the protective glove type to use. This information is rarely found.

**Floor Slope Effects on Lifting
Kinematics and Kinetics
Grant # 5 R03 OH004161-03
Principal Investigator: Raoul Reiser,
Ph.D.
Institution: Colorado State University**



While lifting may cause a large number of workplace injuries, most, if not all, efforts related to lifting in the workplace have been focused on understanding and placing guidelines on lifting from a level surface.

Lifting on an inclined surface may reduce or enhance a person's capability to lift and/or increase the risk for injury compared to lifting on a level surface. This project examines incline of floor surface as an additional risk factor for low back pain and injury. Low back pain and injury are major occupational health problems and if incline is found to be an important factor, then appropriate mitigation actions could be undertaken. Since back injuries are a major occupational health problem across all industries, findings from this research may have tremendous impact upon future prevention strategies and lifting guidelines.

The specific aims of this research were: (1) to quantify lifting capacities on different sloped floors; (2) to determine if modified lifting techniques are adopted on sloped floors

and how these techniques may relate to the likelihood of injury; and (3) if appropriate, to formulate a modification of the NIOSH Lifting Equation.

The study concluded that in general, lifting from a sloped surface is similar to the more familiar level surface and that lifting capacities and maximum low-back forces (at least short-term) are not affected by floor slope within +/- 20 degrees. The preliminary recommendation was that care be taken when lifting from a sloped surface due to the following conditions: (1) a downhill slope creates an increased vertical lift distance which may increase the rate of fatigue; (2) natural curvature of the spine is lost at the time of maximum forces when bending over further to pick up a load on a down hill slope which may increase the risk for injury; (3) there was a tendency for subjects to stand further from the load horizontally on an uphill slope, increasing torque about the low back; and (4) study subjects found difficulty in maintaining balance in the downhill condition in comparison to level or uphill. The study concluded that special attention to proper lifting posture (lifting slowly and standing as close to the box as possible) should be paid in all lifting situations.



Effectiveness of Active Speed Controls in Highway Work Zones

Grant # 5 U60 CC217559-03

Principal Investigator: Satish Mohan, Ph.D.

Institution: Research Foundation of the State University of New York

While the injury rate in total U.S. construction has declined at a rate of 2.9% per year, and the fatality rate in U.S. transportation has declined at a rate of 3.2% per year, the severe injuries in highway work zones have stayed constant at approximately 37,000, and fatalities at 800, for the last several years, costing about \$4.0 billion per year. The objectives of this project were to evaluate the effectiveness of various interventions on the reduction of travel speeds in highway work zones. The proposed interventions are expected to reduce 50% of the injuries and fatalities, caused by 'excessive speed' and 'driver inattention'. The proposed interventions thus have the potential of reducing 168 fatalities, and 7,752 severe injuries; and save \$838 million.

Three interventions were tested: (1) Variable Message Signs ('Work Zone Speed' and 'Your Speed' signs); (2) Rumble strips (raised asphalt, pavement groovings, and 3M masking tape); and (3) Police presence with rumble strips. Out of the three interventions evaluated, police presence along with rumble strips proved to be the most effective active speed control intervention.



**Health Effects of Exposures to VOCs,
Ozone, and Stress**
Grant # 5 R01 OH003691-03
**Principal Investigator: Nancy Fiedler,
Ph.D.**
**Institution: Robert Wood Johnson
Medical School**

Based on several surveys, between 800,000 and 1.2 million buildings in the United States may be associated with sick building syndrome or building related illnesses. Thus, between 30 and 70 million workers estimated to occupy those buildings, are exposed to potentially unhealthy working conditions. Sick building syndrome, more usefully characterized as a non-specific-building-related illness, is characterized by a variety of symptoms in the following areas: mucous membranes; central nervous system (e.g. headache and/or fatigue); respiratory system (e.g. shortness of breath); skin (e.g. rash); and chemosensory (e.g. abnormal odor perception). Numerous epidemiologic investigations of building-related health complaints document multiple factors as contributing to illness, including: indoor air contaminants; characteristics of the ventilation system; work-related stressors; and individual characteristics. While epidemiologic investigations have illuminated risk factors, direct experimental investigation is useful to further elucidate the causal relationships between these factors. The overall purpose of this study was to determine the effects of a psychological stressor and the individual difference variables, negative affect and odor intolerance, on responses of women to a mixture of volatile organic compounds (VOCs) with and without ozone.

This study determined that while potentially irritating gases and particles may be produced from chemical reactions between VOCs and ozone in buildings, the odors associated with these mixtures appear to be the most critical factor in the complaints of building occupants. While the odors were rated by test subjects in the study as unpleasant and intense, health symptoms were not increased above those observed when the odor of VOCs were present in very low concentrations. The study concluded that workers are probably not at increased health risks but probably find the working environment unsatisfactory and annoying. The study also concluded that psychological stress contributes to symptoms of anxiety which may be mistaken for symptoms associated with poor indoor air quality. However, it should be noted that the study evaluated the health effects from an acute exposure over a three hour period, and did not address the

potentially cumulative effects of exposure among office workers who are employed in buildings eight hours a day, five days per week.



**Ergonomic Solutions for Furniture
Manufacturers**
Grant # 5 R01 OH003701-03
**Principal Investigator: Gary Mirka,
Ph.D.**
**Institution: North Carolina State
University**

The furniture manufacturing industry is of vital importance to the economy of the southeastern United States. In North Carolina alone there are over 78,400 people employed by the industry, ranking it second in the state's manufacturing sector employment, and constituting over 9% of the state's manufacturing workforce.

The furniture manufacturing industry has struggled with problems associated with work-related musculoskeletal injuries and illnesses. Bureau of Labor Statistics data from the years 1992-1996 indicate that incidence rate for low back pain cases involving days away from work was 21.98 per 10,000 workers. This is compared to 15.94 for private industry as a whole and 15.6 for general manufacturing industry. The statistics for carpal tunnel syndrome (CTS) and tendonitis also show the furniture manufacturing industry as a high risk industry. On the average, CTS incidence rates are 10.64/10,000 workers (as compared to 8.8 for manufacturing and 4.36 for all private sector) and tendonitis incidence rates are 7.62 per 10,000 workers (as compared to 6.56 for manufacturing and 2.88 for all private industry). Due to the manual nature of much of the work performed in these furniture facilities, workers in this industry are exposed to many of the known risk factors for musculoskeletal disorders (excessive force, awkward postures, repetitive exertions, exposure to vibration, static work postures, etc.). Ergonomic controls are needed.

The objectives of this research were to develop and implement ergonomic controls (simple engineering controls, advanced engineering controls, and administrative controls) in a sample of furniture manufacturing companies and then to evaluate the effectiveness of these interventions with consideration given to the impact that worker participation plays in the acceptance/adoption of ergonomic interventions. The research results were as follows:

1. Low cost interventions were developed and evaluated. Results showed that the ergonomic interventions had positive effects on the biomechanical loading of the furniture workers and most had a positive impact on productivity. Thus the interventions would be within the cost horizons for most manufacturers.

2. Several of the interventions were featured in the American Furniture Manufacturers Association (AFMA) Voluntary Ergonomic Guidelines.

Integrating Safety into National Design Contests for Student Projects

Grant #5 T42 CCT424022

Principal Investigator: Jerry Davis, Ph.D., CPE, CSP

Institution: Auburn University/University of Alabama Birmingham ERC



Throughout the United States, many colleges of engineering encourage their students to participate in contests in which they are required to design, fabricate, test, and operate some type of device or system to compete against similar teams from other universities. Some of these projects are fairly straightforward, but others involve significant faculty and staff support. All have three things in common: (1) students as the primary participants; (2) faculty who provide technical and supervisory support; and (3) some element of risk to those involved. The potential for serious injuries or even fatalities is an ever-present reality during the life of the project. The tragedy of the 1999 Texas A&M University Bonfire, which left 12 students dead, is a sobering reminder of the hazards students may face during the course of a design project.

Graduate students in Auburn University's Occupational Safety and Ergonomics Program lead by Research Assistant Professor, Jerry Davis, PhD, CSP, CPE have partnered with other engineering departments to integrate safety into national sponsored design contest teams. Examples of recent competitions to which Auburn University sent teams include:

Chemical Car (Chemical Engineering)

Concrete Canoe (Civil Engineering)

Formula SAE Car (Mechanical Engineering)

Steel Bridge (Civil Engineering)

2002 Solar House Decathlon (Colleges of Engineering & Architecture)

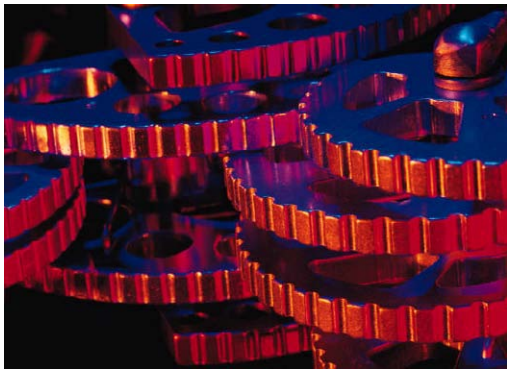
Balsa Bridge, (Civil Engineering)

Mini Baja SAE Vehicle (Mechanical Eng)

Solar Car (Mechanical Engineering)

All of these projects involve the design, construction or fabrication, and operation of vehicles or facility. Dr. Davis and the Occupational Safety & Ergonomics (OS&E)

students serve as safety coordinators in all phases of these projects. Their active participation increased the safety awareness of other students and faculty. Their efforts were recognized at the 2002 Solar House Decathlon in Washington, DC when the safety program for the Auburn house won first place among the nineteen entries. The work of the safety students and Dr. Davis has directly impacted over three hundred other engineering students. Dr. Davis and the students presented a platform at the 2004 American Society of Safety Engineers (ASSE) Conference in Las Vegas that was attended by approximately 100 participants. Additionally, Dr. Davis and two of the safety students have published peer reviewed journal articles about similar topics.



**ERC Faculty and Students Assist
Auto Manufacturer and Union
Address Concerns About Respiratory
Health of Workers
Grant # 5 T42 CCT910427-11
Principal Investigator: Katherine
Hammond
Institution: University of California
Berkeley ERC**

A new contract between the United Auto Workers (UAW) and New United Motor Manufacturing, Inc., (NUMMI) in Fremont, California, has incorporated key recommendations from the Northern California Education and Research Center (ERC).

In 2000, when faculty and students began looking into concerns about respiratory hazards at NUMMI, a truck and automobile assembly plant, their findings pointed to a possible problem with air quality in the truck and car body shops. In their report to NUMMI management and the UAW Local Union 2244, which jointly supported the study, they recommended that NUMMI improve ventilation in the two shops. Since their study had been modest in scope and lacked objective measures like lung function tests, they also recommended further research.

In 2002, a new labor contract between the UAW and NUMMI tripled the available funding for health and safety research—from \$50,000 to \$150,000—and stipulated that, in addition, the company will pay costs associated with time off the job for employees to complete surveys and medical tests. Moreover, the company agreed to improve the quality of air in the truck body shop and the new car body shop without further research into those problems.

Thus began an ongoing relationship between the Northern California ERC, NUMMI, and the UAW to improve working conditions in the Fresno, California plant. Negotiations are currently underway to conduct another research study.

Iron, Calcium, and Oxidative Stress in Lung Injury

Grant # 5 R01 OH003561-03

Principal Investigator: Xi Huang, Ph.D.

Institution: New York University



Striking differences in the prevalence of coal workers' pneumoconiosis and chronic obstructive pulmonary disease exist between different coal mine regions despite comparable levels of dust exposure. The goal of this project was to test the hypothesis that bio-available Fe^{2+} is the active component in coal dust-induced cell injury, and that calcite (CaCO_3) may play a protective role in such injury. This information will allow predictions on which coal is likely to be more toxic, possibly even before large-scale mining.

The investigators found that levels of bioavailable iron in the coals vary from one coalmine region to the other, and it's level positively correlates with the prevalence of pneumoconiosis from that region. Bioavailable iron (including both Fe^{2+} and Fe^{3+}) also induced cell injury through oxidative stress pathways. Calcite was shown to play a protective role by inhibiting solubilization of iron compounds, thus making iron less available. By elucidating the role of bioavailable iron in lung injury, this study should benefit not only coal workers, but also workers of iron ore and steel factories



Health Effects of Metallic Particulate Exposure Among Welders

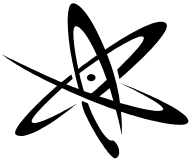
Grant # 5 T42 CCT122961-02

Principal Investigator: David C. Christiani

Institution: Harvard University ERC

Welders and boilermakers are exposed to aerosols containing metals as well as residual oil fly ash. In an intensive investigation of active welders (apprentices and journeymen), the researchers assessed exposure measurements comparing continuous monitoring of PM using DustTrak as well as PEM, and found that they could accurately assess continuous exposures during panel studies using cardiac monitors. In addition, they examined acute systemic responses to metallic fumes and found that systemic inflammatory responses (as indicated by exposure-related increases in white blood cell (WBC) counts, and systemic decreases in fibrinogen) occurred. On the day after acute exposures, plasma C-Reactive Protein (CRP) rose significantly. The PM 2.5 sampler concentrations were associated with both WBC and CRP changes. In addition, they found in this relatively young and healthy group, there was evidence for exposure-response related elevations in a marker of DNA damage, 8-OH-dG, in the urine. This work

answers questions about the nature, onset and course of responses to particulates that may explain the onset of cardiac disease after long term exposure.



**Medical Exam Program for Former Workers of Los Alamos National Laboratory
Grant # 5 T42 CCT310419-11**

Principal Investigators: Brian Schwartz, M.D., M.S., and Patrick Breyesse, Ph.D.

Institution: Johns Hopkins Bloomberg School of Public Health ERC

The purpose of this multidisciplinary program, which concluded in 2004, was to identify former workers from Los Alamos National Laboratory (LANL) who are at increased risk of occupational disease due to past work exposures and to offer risk communication, physical examinations, and follow-up medical referrals based on the findings. All workers who were employed at LANL since 1943 were eligible to participate, but specific recruitment focused on those who, according to job title, had a greater likelihood of exposures to asbestos, beryllium, lead, noise, radiation or solvents. In addition to detailed interviews and medical screening examinations, the program provided workers with risk communication information in the form of presentations and educational materials that addressed (in English and Spanish): the program; exposures and possible health effects; compensation programs and eligibility; references for further information; and health care provider information. The investigators received input and discussed the program through interactions with stakeholders represented on the Steering Committee, as well as in meetings with worker groups and local health care providers. Program evaluation consisted of a confidential satisfaction survey of participants. A total of 2,773 former workers were interviewed and 2,336 were examined. Examples of disorders that were identified and referred for further diagnostics or treatment included: various pulmonary abnormalities; hearing impairment; malignancies; and beryllium disease. Greater than 96% of the participants reported that they were satisfied or very satisfied according to each of the five evaluation categories. Thus, the program provided preventive public health measures to a large population of former nuclear weapons facility workers. Additionally, exposure and health assessment findings have led to ongoing research that will likely have broad application to public health.



All Extramural Projects Receiving FY2004 Funding

Table 6 displays all grants funded by NIOSH in FY 2004. In this table, the projects are grouped by program area. Many NIOSH funded projects are multi-dimensional. For example, a project that is categorized as control technology could also be focused on the mining industry, thus making it difficult to decide where the project should be listed. To present the listing in a way that reflects this complexity, some grants are listed in multiple areas. In the primary program area, the listing will show all information about the grant, while in the secondary program area, the listing will also show a reference to the primary area.

Table 7 displays all grant projects grouped by NORA priority area.

Descriptions of all projects can be found on the Computer Retrieval of Information on Scientific Projects (CRISP) web site. The address for the CRISP Web site is as follows:

<http://www.crisp.cit.nih.gov/>

Table 6 – All FY 2004 Grants Grouped by Program Area

Program Area: Grant Number	Investigator	Institution	Project Title	Project Start	Project End
Agriculture 1R13ES013378-01	Arcury	Wake Forest University Health Sciences	Farmworker Environmental Health Research Comparable Data	8/1/2004	7/31/2005
5U50OH008108-02	Bean	Ohio State University	Ohio Regional Center for Agricultural Disease and Injury	9/30/2003	9/29/2006
5U50OH007544-04	Fenske	University of Washington	Pacific Northwest Agricultural Safety and Health Center	9/30/2001	9/29/2006
5U50OH008107-02	Lee	Marshfield Clinic	National Children’s Center for Rural & Ag Health & Safety	9/30/2003	9/29/2008
5U50OH007541-04	Levin	University of Texas Health Center at Tyler	Southwest Center for Agricultural Safety and Health	9/30/2001	9/29/2006
1R01OH008153-01	May	Mary Imogene Bassett Hospital	Evaluation of an Ergonomically Improved Apple Bag	5/1/2004	4/30/2007
5U50OH007542-04	May	Mary Imogene Bassett Hospital	The Northeast Center of Agricultural Safety and Health	9/30/2001	9/29/2006
5U50OH007547-04	McKnight	University of Kentucky	Southeast Center for Agricultural Health and Injury Prevention	9/30/2001	9/29/2006
5U50OH008085-02	Reynolds	Colorado State University	High Plains Intermountain Center for Ag Health & Safety	9/15/2003	9/14/2006
5U50OH007551-04	Sabella	East Carolina University	A Southeastern Regional Center for Agromedicine	9/30/2001	9/29/2006
5U50OH007548-04	Sanderson	University of Iowa	Great Plains Center for Agricultural Health	9/30/2001	9/29/2006
5U50OH007550-04	Schenker	University of California Davis	Agricultural Health and Safety Center of UC Davis	9/30/2001	9/29/2006
1R13OH823628-01	Buchan	Colorado State University	High Plains Intermountain Center for Ag Health & Safety Conf	See Conference Support Section	
5U01OH008100-02	Chapman	University of Wisconsin Madison	Midwest Nursery Grower Intervention	See Control Technology Section	
5R01OH004084-03	Harris	Virginia Commonwealth University	Pesticide Dose Monitoring In Turf Applicators	See Exposure Assessment Section	
5R01OH007841-03	Reynolds	Colorado State University	New Methods for Evaluation of Organic Dust Aerosols	See Exposure Assessment Section	
1R03OH008000-01A1	Milz	Medical College of Ohio at Toledo	Farm Family Total Noise Exposure Assessment	See Hearing Loss Section	
5U01OH008091-02	Miles	University of California Davis	Ergonomic Partnership to Address Treefruit Worker Injury	See Intervention Effectiveness Section	
5U01OH008110-02	Donham	University of Iowa	Certified Safe Farm Evaluating Health Insurance Claims	See Intervention Effectiveness Section	
5R01OH007400-04	Eskenazi	University of California Berkeley	Endocrine Disruptors and Neurodevelopmental Outcomes	See Fertility and Pregnancy Abnormalities Section	
5R01OH008057-02	McCauley	Oregon Health & Science University	Biomarkers of Pesticide Toxicity Among Teen Farmworkers	See Special Populations Section	
5R01OH007850-02	Fathallah	University of California Davis	Evaluation of the NAGCAT Tractor Guidelines	See Special Populations	

Table 6 – All FY 2004 Grants Grouped by Program Area

Program Area: Grant Number	Investigator	Institution	Project Title	Project Start	Project End
5R01OH008046-02	Marlenga	Marshfield Clinic	Removing the HOOA Family Farm Exemption: Impact On Injury	Section See Special Populations Section	
5R25OH008143-02	Keifer	University of Washington	Community Health Intervention with Yakima Agricultural	See Special Populations Section	
1R25OH008334-01	Shadbeh	Oregon Law Center	Promoting Occupational Health Among Indigenous Farmworkers in Oregon	See Special Populations Section	
5R25OH008144-02	May	Mary Imogene Bassett Hospital	Community Collaboration for Farmworker Health and Safety	See Special Populations Section	
1R25OH008335-01	Quandt	Wake Forest University	JUSTA: Justice and Health for Poultry Workers	See Special Populations Section	
5R25OH007611-04	Arcury	Wake Forest University Health Sciences	Casa A Campo: Pesticide Safety for Farmworkers' Families	See Special Populations Section	
5U01OH008104-02	Anger	Oregon Health & Science University	Effectiveness of Computer-based Safety Training In Vineyard Workers	See Special Populations Section	
5R01OH007578-04	Chapman	University of Wisconsin Madison	Wisconsin Dairy Traumatic Occupational Injury Intervention	See Traumatic Injuries Section	
Conference Support					
1R13OH823628-01	Buchan	Colorado State University	High Plains Intermountain Center for Ag Health & Safety Conference	5/21/2004	5/21/2005
1R13OH923627-01	Miles	University of California	Stooped Posture in the Workplace	5/21/2004	5/21/2005
1R13OH623805-01	Nelson	University of Oklahoma	Conference on Control Banding in the United States	5/21/2004	5/21/2005
Construction					
1U19OH008308-01	Kleiner	Virginia Polytechnic Institute & State University	Program Project to Support Construction Safety and Health	9/15/2004	6/30/2009
1U54OH008307-01	Stafford	The Center to Protect Workers Rights	Centers for Construction Safety and Health	9/1/2004	6/30/2009
5R01OH003699-05	Welch	The Center to Protect Workers Rights	Economic Impact of Injury/illness In Career Roofers	See Social and Economic Consequences Section	
5R21OH007757-02	Kidd	Arizona State University	Evaluating Preassembly of Roof Structural Components	See Intervention Effectiveness Section	
1R43OH008041-01	Behr	Backpocket	Backpocket: Construction Safety Surveillance System	See Surveillance Section	
5R01OH007633-03	Glazner	University of Colorado Health Sciences Center	Surveillance Research Methods In Construction Injury	See Traumatic Injuries Section	
3R01OH007565-03	Stafford	The Center To Protect Workers Rights	Strong Construction Injury Prevention Intervention	See Traumatic Injuries Section	

Table 6 – All FY 2004 Grants Grouped by Program Area

Program Area:	Grant Number	Investigator	Institution	Project Title	Project Start	Project End
Cancer Research Methods						
	5R01OH007590-03	Brandt-Rauf	Columbia University Health Sciences	P53 Biomaker and Intervention In Occupational Cancer	6/1/2002	5/31/2005
	3R01OH004192-03	Brandt-Rauf	Columbia University Health Sciences	Worker Genetic Susceptibility to Mutagenic Risk	7/1/2001	6/30/2005
	1R01OH008149-01	Checkoway	Fred Hutchinson Cancer Research Center	Textile Industry Exposures and Breast Cancer in Women	7/1/2004	6/30/2007
	1R01OH008071-01	Johnson	Tulane University of Louisiana	Cancer Risk In Workers Exposed to Oncogenic Viruses	5/1/2004	4/30/2007
	5R01OH007871-03	Richardson	University of North Carolina Chapel Hill	Susceptibility and Occupational Radiation Risks	9/30/2002	9/29/2005
Control Technology and Personal Protective Equipment						
	5R03OH007836-02	Ashley	University of South Florida	Decay of Acclimation and Time for Re-acclimation	9/30/2003	9/29/2005
	5U01OH008100-02	Chapman	University of Wisconsin Madison	Midwest Nursery Grower Intervention	9/30/2003	9/29/2007
	5R01OH007751-03	Heasley	West Virginia University	Integrated Stability Mapping System for Mines	9/1/2002	8/31/2005
	5R01OH007727-03	Hill	UTD, Inc.	Improved Health and Safety In Mining Through Helical Drilling and Rock Bolt Anchoring	9/30/2002	9/29/2006
	5R01OH007739-03	Kemeny	University of Arizona	Use of Digital Imagery to Characterize Rock Masses	9/1/2002	8/31/2005
	5R01OH007679-03	Lu	University of Cincinnati	Measurements and Control of Diesel Emissions In Underground Mines	9/1/2002	8/31/2005
	5R01OH007732-03	Luo	West Virginia University	Engineering Control of Longwall Machine Noises	9/1/2002	8/31/2005
	1R43OH007963-01A1	Rajagopalan	Nanoscale Materials, Inc.	From Nanoparticles to Novel Protective Garments	7/1/2004	12/30/2004
Exposure Assessment						
	5R01OH007680-03	Baum	Oak Crest Institute of Science	Real-time In Situ Aerosol Monitoring In Mine Atmospheres	9/1/2002	8/31/2006
	1R01OH007493-01A2	Bunge	Colorado School of Mines	Dermal Absorption of Chemicals from Liquid Mixtures	9/1/2004	6/30/2007
	5R01OH003900-03	Cheng	Lovelace Biomedical & Environmental Research	Inhalation Dosimetry/exposure Index of Fiber Aerosol	9/1/2002	8/31/2007
	2R44OH007465-02	Faull	Eltron Research, Inc	Real-time Personal Monitor for the Drycleaning Industry	9/1/2001	8/31/2006
	5R01OH007729-03	Gautam	West Virginia University	Real-time, In-use PM Measurement From Diesel Engines	9/1/2002	8/31/2005
	5R01OH004084-03	Harris	Virginia Commonwealth University	Pesticide Dose Monitoring In Turf Applicators	8/1/2002	7/31/2005
	5R44OH007471-03	Hooker	Nanomaterials Research Llc	Novel Hydrogen Sulfide Sensors for Portable Monitors	9/16/2003	9/15/2005
	5R01OH007529-03	Kasting	University of Cincinnati	Improved Methods for Dermal Exposure Estimation	9/1/2002	8/31/2006

Table 6 – All FY 2004 Grants Grouped by Program Area

Program Area:	Grant Number	Investigator	Institution	Project Title	Project Start	Project End
	5R01OH007803-02	Loomis	University of North Carolina Chapel Hill	Chrysotile: New Exposure Indices and Cancer Epidemiology	9/30/2003	9/29/2007
	5R01OH007598-02	Nylander-French	University of North Carolina, Chapel Hill	Dermal Exposure to 1,6-hexamethylene Diisocyanate	8/1/2003	7/31/2006
	1R03OH008024-01A1	Pang	E.O. Lawrence Berkeley National Lab	Exposure Assessment Tools for Multiple Pollutants	9/1/2004	8/31/2006
	5R01OH007976-02	Pinney	University of Cincinnati	B-2 Microglobulin:Renal Biomarker Workplace U Exposure	9/30/2003	9/29/2005
	5R21OH007632-03	Qu	New York University School of Medicine	Validation of Biomarkers In Humans Exposed to PAHs	1/1/2002	12/31/2004
	5R01OH007841-03	Reynolds	Colorado State University	New Methods for Evaluation of Organic Dust Aerosols	8/1/2002	7/31/2007
	5R01OH007495-02	Rosenman	Michigan State University	Genetic/exposure Interaction In Beryllium Disease	8/1/2003	7/31/2006
	5R03OH007834-02	Symanski	University of Texas Health Science Center Houston	Evaluation of Exposure Measurement Error	9/30/2003	8/31/2005
	5R01OH003658-03	Thrall	Battella Pacific Northwest Laboratories	Dermatopharmacokinetics: In Vivo Analysis of Solvents	9/30/2003	9/29/2006
	2R01OH002984-07A1	Vincent	University of Michigan at Ann Arbor	Workplace Aerosol Sampling At Realistic Low Windspeeds	9/1/1994	8/31/2007
Social and Economic Consequences of Occupational Injury and Disease						
	5R01OH004069-04	Franklin	University of Washington	Disability Risk In Work-related Musculoskeletal Injury	9/30/2001	9/29/2006
	5K01OH007999-01	Galizzi	University of Massachusetts Lowell	On-the-Job Inquiry: Employment History and Hidden Losses	9/1/2003	8/31/2006
	5R01OH007811-02	Shannon	Mc Master University	Use of Health and Social Services Following Work Injury	9/15/2003	9/14/2005
	1R01OH007900-01A1	Tompa	Institute for Work and Health	Post-accident Earning and Benefits Adequacy and Equity	6/30/2004	6/29/2007
	5R01OH003699-05	Welch	The Center to Protect Workers Rights	Economic Impact of Injury/illness In Career Roofers	9/30/2001	9/29/2005
Hearing Loss						
	5R01OH003973-03	Bohne	Washington University	Adverse Effects of Noise on Hearing: Basic Mechanisms	5/1/2001	4/30/2006
	5R01OH003481-07	Fechter	Lome Linda Veterans Assn/Research Educ	Models for Assessing Risk of Occupational Hearing Loss	9/30/2002	9/29/2006
	2R01OH002317-19A1	Hamernik	Plattsburgh State University	Hearing Hazard Associated with Industrial Noise Exposure	8/1/1987	7/31/2007
	1R01OH007801-01A1	Hamernik	Plattsburgh State University	Model for Prediction of Noise-induced Hearing Loss	4/1/2004	3/31/2006

Table 6 – All FY 2004 Grants Grouped by Program Area

Program Area:				Project Start	Project End
Grant Number	Investigator	Institution	Project Title		
1R03OH008000-01A1	Milz	Medical College of Ohio at Toledo	Farm Family Total Noise Exposure Assessment	4/1/2004	3/31/2006
1R03OH008175-01	Qiu	Plattsburgh State University	Neural network model of noise-induced hearing loss	7/1/2004	6/30/2006
5R01OH007724-03	Rabinowitz	Yale University	Noise, Solvents, and Hearing Loss	9/30/2002	9/29/2005
Health Services Research					
5R03OH007512-02	Maupome	Kaiser Foundation Research Institute	Sharp Instrument Injuries and Use of Clinical Services	9/30/2003	9/29/2005
5K01OH007922-02	Risचितेलि	Oregon Health & Science University	Geographic Variation In Spine Care Among Injured Workers	9/30/2003	9/29/2005
Infectious Diseases					
5K01OH007614-03	Babcock	Washington University	Body Substance Exposure: Psychological Impact	9/1/2002	8/31/2005
1R100H008215-01	Gershon	Mailman School of Public Health	Blood Borne Pathogen Risk in Home Healthcare Workers	9/1/2004	6/30/2008
2R01OH008241	Leiss	Constella Group, Inc	Exposure to Blood Among Home Health Care Nurses	9/1/2004	6/30/2007
1R01OH008237-01	Lipscomb	University of Maryland	Blood Exposure and Primary Prevention in Home Care	7/1/2004	6/30/2008
5R01OH007489-03	Mittleman	Beth Israel Deaconess Medicine	A Case-crossover Study of Sharps-related Injuries	9/1/2002	8/31/2006
5U36CC300430-02	Nicas	University of California	Risk Assessment for Airborne Bioterrorism Agents - PERT		3/1/2005
1R01OH008229-01	Quinn	University of Massachusetts Lowell	Sharps Injuries and Blood Exposure in Home Health Care	7/1/2004	6/30/2008
Indoor Environment					
1K01OH008029-01A1	Mainelis	Rutgers The State University of New Jersey New Brunswick	Evaluation of Portable Samplers for Viable Bioaerosols	9/1/2004	8/31/2007
1R01OH008117-01	Mendell	University of California-Lawrence Berkeley Lab	Indoor Environment and Symptoms In Office Building	4/1/2004	3/31/2007
1R03OH007904-01A1	Yang	University of Miami	Personal Displacement Ventilation	6/1/2004	5/31/2006
5R01OH003692-06	Zellers	University of Michigan at Ann Arbor	Microanalytical System for Indoor Voc Monitoring	9/30/1998	5/31/2005
Intervention Effectiveness Research Methods					
5R01OH007647-03	Brisson	University of Quebec	Intervention Research On Work Organization Factors	9/30/2002	9/29/2005
5R01OH007490-03	Conrad	University of Illinois at Chicago	Designing Ergonomic Interventions for the Fire Service	9/30/2002	9/29/2005
5U01OH008110-02	Donham	University of Iowa	Certified Safe Farm Evaluating Health Insurance Claims	9/1/2003	8/31/2007
5R03OH007843-02	Ehrlich	George Washington University	Sun Protection and Skin Cancer Awareness In Watermen	8/1/2003	7/31/2005

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	5R21OH007757-02	Kidd	Arizona State University	Evaluating Preassembly of Roof Structural Components	9/30/2002	1/31/2005
	5R01OH004246-03	Liu	Yale University	Isocyanate Exposure Intervention Study In Body Shops	9/30/2002	9/29/2005
	5R01OH007817-02	Mendeloff	University of Pittsburgh at Pittsburgh	Causes and Effects of Compliance With OSHA Standards	6/1/2003	5/31/2006
	5U01OH008091-02	Miles	University of California Davis	Ergonomic Partnership to Address Treefruit Worker Injury	9/30/2003	9/29/2007
	5R01OH003884-04	Parker	Park Nicollet Institute	Effectiveness of Machine Guarding Intervention	9/30/2001	9/29/2007
Asthma and Chronic Obstructive Pulmonary Disorders						
	1R03OH008136-01	Arif	Texas Tech	Occupational Asthmagens in Cleaners: A Focus Group Study	9/1/2004	6/30/2006
	5R01OH002421-13	Christiani	Harvard University (School of Public Health)	Lung Disease In Chinese Textile Workers	9/30/1995	9/29/2005
	5R01OH003457-08	Cullen	Yale University	Longitudinal Study of Isocyanate Asthma In Body Shops	9/30/2002	9/29/2007
	5K01OH007608-03	Sama	Harvard University (School of Public Health)	Physiologic Characterization of Occupational Asthma	9/1/2002	8/31/2005
Musculoskeletal Disorders: Low Back						
	5U01OH008083-02	Garg	University of Wisconsin Milwaukee	Low Back Pain Quantifying Risk Factors	9/30/2003	9/29/2006
	1R01OH008007-01	Lipscomb	Duke University	Back Disorders In Union Carpenters	10/1/2003	9/30/2006
	5R01OH007787-03	Marras	Ohio State University	Neuro-fuzzy Prediction of Spine Loads In Response to Risk Factors	9/30/2002	9/29/2006
	5U01OH007313-05	Marras	Ohio State University	Identifying Safe Load Moment Exposures for the Back	9/30/2000	9/29/2005
	5K01OH007996-02	Pompeii	Duke University	Back Pain & Work Disability In Health Care Workers	9/30/2003	9/29/2006
	5R01OH007622-02	Solomonow	Louisiana State Univ HSC New Orleans	Physiology of Cumulative Low Back Disorders	8/1/2003	7/31/2008
	5R03OH007995-02	Wilson	University of Kansas Lawrence	Vibration, Proprioception, and Low Back Stability	9/30/2003	9/29/2005
Mixed Exposures						
	1R01OH008198-01	Fiedler	UMDNJ-Robert W Johnson Medical School	Solvent Exposure: Functional Imaging and Behavior	9/1/2004	8/31/2007
Mining						
	1R25OH008319-01	Grayson	University of Missouri-Rolla	Western U.S. Mining Safety and Health Training and Translation Center	9/1/2004	8/31/2009
	1R43OH007662-01A1	Sun	AAC International	A Laser-Based Device for Work Site Stability Assessment	9/1/2004	2/28/2005

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	5U36CC300430-20AM	Franzblau	University of Michigan	Evaluation of Digital Chest Radiographs for Pneumoconioses - PERT	9/30/2000	9/30/2005
	5U36CC300430-20	Riedel	ASPH Fellowship	ASPH for the Improvement of Interaction Between Phase and PHPs	9/30/2000	9/30/2005
	5R01OH007732-03	Luo	West Virginia University	Engineering Control of Longwall Machine Noises	See Control Technology Section	
	5R01OH007727-03	Hill	UTD, Inc.	Improved Health and Safety In Mining Through Helical Drilling and Rock Bolt Anchoring	See Control Technology Section	
	5R01OH007751-03	Heasley	West Virginia University	Integrated Stability Mapping System for Mines	See Control Technology Section	
	5R01OH007679-03	Lu	University of Cincinnati	Measurements and Control of Diesel Emissions In Underground Mines	See Control Technology Section	
	5R01OH007739-03	Kemeny	University of Arizona	Use of Digital Imagery to Characterize Rock Masses	See Control Technology Section	
	5R01OH007729-03	Gautam	West Virginia University	Real-time, In-use Pm Measurement From Diesel Engines	See Exposure Assessment Section	
	5R01OH007680-03	Baum	Oak Crest Institute of Science	Real-time In Situ Aerosol Monitoring In Mine Atmospheres	See Exposure Assessment Section	
Musculoskeletal Disorders: Upper Extremities						
	1K01OH007826-01A1	Baker	University of Pittsburgh at Pittsburgh	Developing an Instrument to Measure Keyboarding Style	5/1/2004	4/30/2007
	5R01OH003970-05	Barbe	Temple University	Force - Repetition Interaction In A Rat Injury Model	6/1/2000	5/31/2005
	5U01OH007312-05	Cherniack	University of Connecticut School of Med/Dnt	Exposure Response Relationship In Hand Arm Vibration	9/30/2000	9/29/2005
	5R03OH007829-02	Clancy	Worcester Polytechnic Institute	Estimating Joint Impedance From the Surface Emg	9/15/2003	9/14/2005
	1R01OH008017-01	Evanoff	Washington University	Post-offer Screening and Risk Factors for CTS	6/1/2004	5/31/2009
	5U01OH007917-03	Garg	University of Wisconsin Milwaukee	Upper Limb Musculoskeletal Disorders: Quantifying Risk	9/30/2002	9/29/2006
	5R01OH007945-02	Gerr	University of Iowa	Prospective Study of UEMSD and Physical Job Stressors	9/1/2003	8/31/2007
	5R01OH007786-02	King	University of California San Francisco	In Vivo Rabbit Model of Finger Musculoskeletal Disorders	9/30/2003	8/31/2007
	5R01OH007441-04	Lehman	University of California Berkeley	Effects of Repetitive Work On Fatigue of Long Duration	9/30/2001	9/29/2005
	5R01OH007793-03	Radwin	University of Wisconsin Madison	Biomechanical Effects of Industrial Eccentric Exertions	9/30/2002	9/29/2005

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	5R01OH007914-02	Rempel	University of California San Francisco	Collaborative Study: Workplace Musculoskeletal Disorders	9/1/2003	8/31/2007
	5R01OH007359-04	Rempel	University of California San Francisco	A Model for Wrist and Elbow Musculoskeletal Disorders	7/1/2001	6/30/2005
	2R01OH003493-04A1	Riley	Medical College of Wisconsin	Understanding Vibration Injury	9/1/2004	6/30/2009
	5R01OH007779-03	Ritz	University of California Los Angeles	Ergonomic Interventions for Garment Work	9/30/2002	9/29/2005
	3U01OH007316-04W1	Silverstein	Washington State Dept Lab/Indust	Prospective Study of Upper Extremity Musculoskeletal Disorders	9/30/2000	9/29/2005
	5U01OH007316-05	Silverstein	Washington State Dept Lab/Indust	Prospective Study of Upper Extremity Musculoskeletal Disorders	9/30/2000	9/29/2005
	5K01OH007838-02	Zhang	University of Illinois Urbana-Champaign	Shoulder, Low Back, Or Knee Strength Degradation	9/1/2003	8/31/2006
Other Occupational Safety and Health Issues						
	5U50CC304522-14	Champion	Minority Health Professionals Foundation	Minority Health Professional Foundation Biomedical Sciences	9/30/1989	9/29/2005
	1R25OH008296-01	Eijkemans	World Health Organization (WHO)	WHO Global Occupational Health Programme	9/29/2004	9/28/2007
	5U50CC411492-05	Haynes	Morehouse College	IMHOTEP	9/9/1994	1/28/2005
	5U01OH007869-03	Lamar	International Association of Fire Fighters	Hazardous Substance Training for Emergency Responders	9/30/2002	9/29/2007
Organization of Work						
	3R01OH007366-03S1	Barbeau	Dana-Farber Cancer Institute	Physical/social Hazards--jobs, Race, Gender and Health	9/30/2001	9/29/2004
	5R01OH007567-04	Czeisler	Brigham & Women's Hospital	Effects of Extended Work Hours On Intern Health & Safety	9/30/2001	9/29/2005
	1R01OH008496-01	Czeusker	Brigham & Women's Hospital	Sleep Disorders Management, Health, and Safety in Police	9/30/2004	9/30/2007
	5R01OH003954-05	Eastman	Rush-Presbyterian-St Lukes Medical Center	Practical Circadian Interventions for Night Shift Work	9/30/1999	4/30/2008
	5R01OH007820-02	Krause	University of California San Francisco	Occupational Physical Activity and Circulatory Diseases	8/1/2003	7/31/2006
	5R01OH007577-04	Landsbergis	Mount Sinai School of Medicine of NYU	Work Hours, Musculoskeletal Disorders and CVD Risk	9/30/2001	9/29/2005
	1R01OH008141-01	Schieman	University of Maryland, College Park Campus	Origins and Health Impact of Relational Conflict At Work	4/1/2004	3/31/2008
	5R01OH007554-04	Trinkoff	University of Maryland Baltimore Prof School	Extended Work Schedules and Workplace Injury In Nurses	9/30/2001	9/29/2005

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Risk Assessment Methods						
	5R01OH007864-03	Moolgavkar	Fred Hutchinson Cancer Research Center	Stochastic Models for Radiation Carcinogenesis: Temporal Factors and Dose-Rate Effects	9/30/2002	9/29/2005
	1R01OH008087-01	Xue	Yeshiva University	Occupational Cohorts: Confounder/effect-modifier Models	9/1/2004	8/31/2007
Fertility and Pregnancy Abnormalities						
	5K01OH007609-02	Dardynskaia	University of Illinois At Chicago	Reproductive Outcomes Due to Past Exposure to Dioxins	8/11/2003	8/10/2006
	5R01OH007400-04	Eskenazi	University of California Berkeley	Endocrine Disruptors and Neurodevelopmental Outcomes	9/30/2001	9/29/2005
	5R01OH007580-02	LI	Kaiser Foundation Research Institute	Exposure to Bisphenol A & Reproductive Effect in Humans	9/30/2003	9/29/2008
	5R01OH007575-04	Robbins	University of California Los Angeles	Male Reproductive Effects From Exposure to Boron	9/30/2001	9/29/2006
Radiation						
	1R01OH007866-01A1	Day	University of Pittsburgh	Health Effects of Radiation Exposures in Russian Workers	9/1/2004	6/30/2007
Small Business Innovation Research						
	5R44OH003881-03	Echols	Riverbend Instruments, Inc.	Simple Device/measure Omnidirectional Germicidal UV Rad	9/30/2001	9/29/2005
	5R44OH007461-03	Harrington	Harrington Software Associates	Occupational Safety and Health Training for Teleworkers	9/15/2003	9/14/2005
	2R44OH007673-02A1	Masterman	Robert C. Byrd Technology Center	Bioelectric Telemetry System for Fire Fighter Safety	9/1/2004	8/31/2006
	2R44OH004173-02A1	Wiesmann	Biostar, Inc.	SCBA Oximetry for Fire Fighter Physiologic Monitoring	9/30/2000	6/30/2006
Special Populations at Risk						
	5U01OH008104-02	Anger	Oregon Health & Science University	Effectiveness of Computer-based Safety Training In Vineyard Workers	9/30/2003	9/29/2007
	5R25OH007611-04	Arcury	Wake Forest University Health Sciences	Casa A Campo: Pesticide Safety for Farmworkers' Families	9/30/2001	9/29/2005
	5R25OH008146-02	Bhatia	San Francisco Dept of Public Health	Jornaleros Unidos Con El Pueblo (day Laborers United)	9/30/2003	9/29/2007
	1R03OH008126-01	Breslin	Institute for Work and Health	Work Injury and Young People: A Prospective Survey	6/1/2004	5/31/2006
	5R01OH007592-03	Cham	University of Pittsburgh at Pittsburgh	Biomechanics of Slips In Older Adults	8/1/2002	7/31/2005

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	1R01OH007908-01A1	Dal Santo	University of North Carolina Chapel Hill	Effect of Work Permits In Protecting Youth Workers	4/1/2004	3/31/2006
	5R01OH007850-02	Fathallah	University of California Davis	Evaluation of the NAGCAT Tractor Guidelines	8/1/2003	7/31/2006
	5R25OH008143-02	Keifer	University of Washington	Community Health Intervention with Yakima Agricultural *	9/1/2003	8/31/2007
	1R03OH007821-01A2	Madigan	Virginia Polytechnic Inst and State University	Muscle Strength and Age Effects in Balance Recovery	8/1/2004	7/31/2006
	5R01OH008046-02	Marlenga	Marshfield Clinic	Removing the HOOA Family Farm Exemption: Impact On Injury	9/30/2003	9/29/2006
	5R25OH008144-02	May	Mary Imogene Bassett Hospital	Community Collaboration for Farmworker Health and Safety	9/1/2003	8/31/2007
	5R01OH008057-02	McCauley	Oregon Health & Science University	Biomarkers of Pesticide Toxicity Among Teen Farmworkers	9/30/2003	9/29/2006
	1R25OH008335-01	Quandt	Wake Forest University	JUSTA: Justice and Health for Poultry Workers	9/1/2004	8/31/2008
	5R01OH004157-04	Reed	University of Kentucky	Sustained Work Indicators of Older Farmers	9/30/2001	9/29/2006
	5K01OH007956-02	Roelofs	University of Massachusetts Lowell	Nail Salon Hazards and Health Effects	9/1/2003	8/31/2006
	5R01OH008058-02	Schwab	Iowa State University of Science & Tech	Evaluation of Occupational Carrying Tasks for Farm Youth	9/1/2003	8/31/2006
	1R25OH008334-01	Shadbeh	Oregon Law Center	Promoting Occupational Health Among Indigenous Farmworkers in Oregon	8/1/2004	7/31/2008
	1R25OH008378-01	Shen	Asians and Pacific Islanders for Reproductive Health	Asian Girls for Environmental Health	8/1/2004	7/31/2008
	5R01OH007381-05	Slatin	University of Massachusetts Lowell	Health Disparities Among Healthcare Workers	9/30/2000	9/29/2005
	5R03OH007840-02	Tsai	Seattle University	Occupational Health of Immigrants Working In Restaurants	9/1/2003	8/31/2005
	5R01OH008070-02	Wilkins	Ohio State University	Adherence to the NAGCAT and Injury Risk Reduction	9/30/2003	9/29/2006
Surveillance						
	1U60OH008342-01	Archer	Oklahoma State Department of Health	(FACE) Oklahoma	9/30/2002	9/29/2006
	1U60OH008337-01	Ball	Utah Department of Health	Sensor: Utah; State-based Surveillance of Work-related Burns	9/30/2002	9/29/2005
	1R43OH008041-01	Behr	Backpocket	Backpocket: Construction Safety Surveillance System	7/1/2004	12/30/2004
	1U60OH008344-01	Bender	Minnesota Department of Health	(FACE) Minnesota	9/1/2001	8/31/2006
	5R01OH007596-03	Boden	Boston University Medical Campus	Capture-recapture Estimates of Workplace Injury Rates	9/1/2002	8/31/2005
	5U01OH007292-04	Bonauto	Washington State Dept Lab/Indust	Occupational Surveillance Modules for Prevention	7/1/2001	6/30/2005
	1U60OH008345-01	Bost	New Jersey Department of Health & Senior Services	(FACE) New Jersey	9/1/2001	8/31/2006
	5U01OH007306-04	Cameron	Michigan State Dept of Community Health	Core Occupational Health Surveillance In Michigan	9/30/2000	9/29/2004

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1U60OH008346-01	Campbell	NC Department of Health & Human Services	Enhancement of NC State-based Occupational Surveillance (n Capacity)	9/30/2002	9/29/2005
1U60OH008336-01	Cohen	Washington State Department of Labor & Industries	(FACE) Washington	9/1/2002	8/31/2006
5U01OH007302-04	Davis	Massachusetts State Dept of Pub Health	Core Occupational Health Surveillance In Massachusetts	7/1/2001	6/30/2005
1U60OH008332-01	Davis	Massachusetts Dept of Public Health	SENSOR: Massachusetts; Surveillance of Work-related Asthma	9/30/2002	9/29/2005
1U60OH008331-01	Davis	Massachusetts Dept of Public Health	(FACE) Massachusetts	9/1/2001	8/31/2006
5R01OH003979-04	Dement	Duke University	Surveillance Methods for Health Care and Related Workers	9/30/2001	9/29/2005
5R01OH007830-02	Dischinger	University of Maryland Baltimore Prof School	A Comprehensive Surveillance of Occupational Injury In Maryland	7/10/2003	7/9/2006
5R01OH003915-03	Fleming	University of Miami-Medical	Surveillance of Mortality and Morbidity In US Workers	9/1/2002	8/31/2005
5U01OH007308-04	Gelberg	Bureau of Occupational Health	Core Surveillance of Occupational Health In New York	7/1/2001	6/30/2005
1U60OH008330-01	Gelberg	New York Sate Department of Health	(FACE) New York	9/1/2001	8/31/2006
1U60OH008328-01	Hanrahan	Department of Health and Family Services	(FACE) Wisconsin	9/1/2001	8/31/2006
5U01OH007307-04	Harrison	Public Health Institute	Core Surveillance Model Program In California	9/30/2000	9/29/2004
1U60OH008327-01	Harrison	California Department of Health Services	Sensor: California	9/30/2002	9/29/2005
1U60OH008326-01	Harrison	California Department of Health Services	(FACE) California	9/1/2001	8/31/2006
1U60OH008325-01	Hetzler	Nebraska Workforce Development, Department of Labor	(FACE) Nebraska	9/1/2002	8/31/2006
1U60OH008348-01	Heumann	Oregon Department of Human Services	Sensor: Oregon; State-based	9/30/2002	9/29/2005
1U60OH008324-01	Heumann	Oregon State University	Oregon Face Project	9/1/2002	8/31/2006
1U60OH008340-01	Hull-Jilly	Alaska Department of Health and Social Services	(FACE) Alaska	9/1/2001	8/31/2006
1U60OH008349-01	John	Texas Department of Health	Sensor: Texas; Occupational Pesticide Poisoning, TX	9/30/2002	9/29/2005
1U60OH008397-01	Kalinowski	Michigan Department of Labor and Economic Growth	Sensor - Michigan	9/30/2002	9/29/2005
1U60OH008343-01	Kennedy	West Virginia Department of Health & Human Services	(FACE) West Virginia	9/1/2001	8/31/2006
5U01OH007277-11	Knutson	Council of State and Territorial Epidemiologists	Building Environmental Epidemiology Capacity At the State Level	9/30/1991	9/30/2005
1U60OH008398-01	Kraemer	Iowa Department of Public Health	(FACE) Iowa	9/1/2001	8/31/2006
1U53OH008399-01	Lim	Maine Department of Labor	Maine; Occupational Safety Core Surveillance Indicator Program (n Capacity)	9/30/2002	9/29/2005

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	1U60OH008341-01	Mauer	New York State Department of Health	SENSOR: New York; Sentinel Event Notification of Occupational Risks	9/30/2002	9/29/2005
	1U60OH008329-01	Peck	Michigan Department of Labor and Economic Growth	(FACE) Michigan	9/30/2002	9/29/2006
	1U53OH008347-01	St. Louis	Connecticut Department of Public Health	Connecticut; Occupational Disease Surveillance Enhancement Project (n Capacity)	9/30/2002	9/29/2005
	1U60OH008338-01	Valiante	New Jersey Department of Health and Senior Services	Sensor: New Jersey; Surveillance of Occupational Asthma and Silicosis	9/30/2002	9/29/2005
	1U53OH008339-01	Voorhees	New Mexico Department of Health	New Mexico; Worker Health Surveillance (n Capacity)	9/30/2002	9/29/2005
	1U60OH008350-01	Williams	Kentucky Department for Public Health	(FACE) Kentucky	9/1/2002	8/31/2006
Traumatic Injuries						
	5R01OH007931-03	Anderson	University of Kentucky	Risk for Workplace Violence In Long-haul Truckers	9/30/2002	9/29/2005
	5R01OH007947-03	Blodgett	Washington State University	Spokane Workplace Domestic Violence Initiative	9/30/2002	9/29/2005
	5R01OH007578-04	Chapman	University of Wisconsin Madison	Wisconsin Dairy Traumatic Occupational Injury Intervention	9/30/2001	9/29/2005
	1R01OH007816-01A1	Gerberich	University of Minnesota Twin Cities	Violence Against Teachers: Etiology & Consequences	5/1/2004	4/30/2007
	5R01OH007633-03	Glazner	University of Colorado Health Sciences Center	Surveillance Research Methods In Construction Injury	9/30/2002	9/29/2005
	5R01OH007558-04	Korniewicz	University of Miami Coral Gables	Evaluation of Traumatic Injuries In HCW During Surgery	9/30/2001	9/29/2005
	5R01OH007948-03	Lipscomb	University of Maryland Baltimore Prof School	Evaluation of Workplace Violence Prevention Intervention	9/30/2002	9/29/2007
	5R01OH003897-05	Loomis	University of North Carolina Chapel Hill	Homicide During Robbery: A Case-control Study	8/1/2003	7/31/2005
	5R01OH007882-02	Nussbaum	Virginia Polytechnic Inst and State University	Risk Factors and Controls for Falls From Heights	9/1/2003	8/31/2007
	5R01OH007934-03	Peek-asa	University of Iowa	Evaluation of California Initiatives to Reduce Violence	9/30/2002	9/29/2005
	3R01OH007565-03S1	Stafford	The Center To Protect Workers Rights	Strong Construction Injury Prevention Intervention	9/30/2001	9/29/2004
World Trade Center						
	1U10OH008225-01	Herbert	Mount Sinai School of Medicine	WTC Responder Health Consortium Clinical Center	7/15/2004	7/14/2009
	1U10OH008243-01	Kelly	New York City Fire Department	NYC Fire Dept. Clinical Center for WTC Medicals	4/1/2004	4/1/2009
	1U10OH008232-01	Levin	Mount Sinai School of Medicine	WTC RHC Data and Coordination Center	3/15/2004	3/14/2009
	1U10OH008275-01	Markowitz	Research Foundation of CUNY	Queens Ground Zero Workers Health Watch	4/1/2004	3/31/2009
	1U10OH008216-01	Parkinson	Research Foundation of the NY State University	Clinical Services for World Trade Center Responders	7/15/2004	7/14/2009
	1U10OH008242-01	Prezant	New York City Fire Department	NYC Fire Dept. Data Coordinating Center for WTC Medicals	4/1/2004	4/1/2009

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	1U10OH008223-01	Reibman	NY University School of Medicine	NYU World Trade Center Responder Health Consortium	8/13/2004	8/12/2009
	1U10OH008239-01	Udasin	UMDNJ-Robert W Johnson Medical School	Clinical Center for Monitoring Health in WTC Responders	7/1/2004	6/30/2009
Education and Training						
Education and Research Centers (ERC)						
	5 T42 CCT310419-11	Agnew	Johns Hopkins University	Education and Research Center	7/1/1977	6/30/2007
	5 T42 CCT412874-08	Brooks	University of South Florida	Education and Research Center	7/1/1997	6/30/2007
	5 T42 CCT122961-02	Christiani	Harvard School of Public Health	Education and Research Center	7/1/1977	6/30/2008
	5 T42 CCT510420-11	Clark	University of Cincinnati	Education and Research Center	7/1/1977	6/30/2005
	5 T42 CCT522954-02	Conroy	University of Illinois at Chicago	Education and Research Center	7/1/1977	6/30/2008
	5 T42 CCT610417-11	Delclos	University of Texas Health Science Center	Education and Research Center	7/1/1977	6/30/2005
	5 T42 CCT510422-11	Greaves	University of Minnesota	Education and Research Center	7/1/1977	6/30/2007
	2 T42 CCT924019-01	Hinds	University of California Los Angeles	Education and Research Center	7/1/1978	6/30/2009
	5 T42 CCT210425-11	Landrigan	Mount Sinai School of Medicine	Education and Research Center	7/1/1978	6/30/2005
	5 T42 CCT810426-11	Moser	University of Utah	Education and Research Center	7/1/1978	6/30/2007
	2 T42 CCT424022-01	Ostenstad	University of Alabama at Birmingham	Education and Research Center	10/1/1981	6/30/2006
	5 T42 CCT510428-11	Robins	University of Michigan	Education and Research Center	7/1/1982	6/30/2005
	5 T42 CCT422952-02	Rogers	University of North Carolina at Chapel Hill	Education and Research Center	7/1/1977	6/30/2006
	5 T42 CCT010418-11	Seixas	University of Washington	Education and Research Center	7/1/1977	6/30/2005
	5 T42 CCT910427-11	Spear	University of California - Berkeley	Education and Research Center	7/1/1982	6/30/2007
	5 T42 CCT722958-02	Sprince	University of Iowa	Education and Research Center	7/1/2000	6/30/2008
Training Project Grants (TPG)						
	1 T02 CCT324005-01	Anna	Millersville University	Undergraduate Training Program	7/1/2004	6/30/2009
	2 T01 CCT523999-01	Bisesi	Medical College of Ohio	Graduate Training Program	7/1/2001	6/30/2005
	5 T01 CCT810435-11	Blehm	Colorado State University	Graduate Training Program	7/1/1975	6/30/2005
	1 T02 CCT424008-01	Carter	North Carolina A&T State University	Undergraduate Training Program	7/1/2004	6/30/2009
	5 T02 CCT815868-06	Covington	Trinidad State Junior College	Undergraduate Program	7/1/1999	6/30/2007
	5 T01 CCT910446-11	Crutchfield	University of Arizona	Graduate Training Program	8/1/1985	6/30/2005
	5 T01 CCT420005-04	Darcey	Duke University	Graduate Training Program	7/1/2001	6/30/2006
	5 T15 CCT010469-11	Dzuga	Alaska Marine Safety Education Assoc.	Continuing Education Program	7/1/1993	6/30/2006
	5 T01 CCT110456-11	Ellenbecker	University of Massachusetts Lowell	Graduate Training Program	1/1/1991	6/30/2005
	5 T01 CCT322951-02	Emmett	University of Pennsylvania	Graduate Training Program	9/30/1999	6/30/2008
	2 T01 CCT424007-01	Feigley	University of South Carolina	Graduate Training Program	7/1/1979	6/30/2009
	2 T02 CCT424006-01	Figueroa	University of North Alabama	Undergraduate Training Program	7/1/2001	6/30/2005
	5 T01 CCT520355-03	Fonooni-Fard	University of Minnesota Duluth	Graduate Training Program	9/29/2002	6/30/2009

Table 6 – All FY 2004 Grants Grouped by Program Area

Program Area:	Grant Number	Investigator	Institution	Project Title	Project Start	Project End
	2 T01 CCT423997-01	Frumkin	Emory University	Graduate Training Program	7/1/1992	6/30/2007
	5 T01 CCT020374-03	Funk	Oregon State University	Graduate Training Program	7/1/2002	6/30/2005
	5 T01 CCT022953-02	Gonzales	University of Puerto Rico	Graduate Training Program	7/1/1980	6/30/2008
	5 T01 CCT020346-03	Hammer	Portland State University	Graduate Training Program	7/1/2002	6/30/2005
	5 T01 CCT122962-02	Henning	University of Connecticut	Graduate Training Program	7/1/2003	6/30/2006
	5 T03 CCT822949-02	Jensen	Montana Tech	Undergraduate and Graduate Training Program	7/1/1986	6/30/2005
	2 T01 CCT424002-01	Kahlil	University of Miami	Graduate Training Program	7/1/1993	6/30/2009
	5 T03 CCT410451-11	Kraemer	Murray State University	Undergraduate and Graduate Training Program	7/1/1986	6/30/2008
	5 T01 CCT310445-11	McCauley	University of Pennsylvania	Graduate Training Program	8/1/1985	6/30/2007
	2 T01 CCT124023-01	Meyer	University of Connecticut Health Center	Graduate Training Program	7/1/1996	6/30/2009
	5 T01 CCT810468-10	Mueller	University of Colorado	Graduate Training Program	7/1/1993	6/30/2005
	2 T01 CCT624012-01	Phillips	University of Oklahoma	Graduate Training Program	7/1/1999	6/30/2007
	5 T01 CCT510467-11	Rosenthal	Purdue University	Graduate Training Program	7/1/1993	6/30/2006
	5 T02 CCT110457-11	Ryan	Central Maine Technical College	Undergraduate Training Program	7/1/1991	6/30/2007
	5 T01 CCT910442-11	Samimi	San Diego State University	Graduate Training Program	8/1/1985	6/30/2005
	5 T01 CCT310441-11	Schwerha	University of Pittsburgh	Graduate Training Program	7/1/1986	6/30/2006
	2 T01 CCT624004-01	Smith	Texas Tech University	Graduate Training Program	5/1/1981	6/30/2005
	5 T01 CCT422950-02	Sprau	East Carolina University	Graduate Training Program	7/1/1992	6/30/2006
	5 T01 CCT420339-03	Stobbe	Embry-Riddle Aeronautical University	Graduate Training Program	9/29/2002	6/30/2005
	5 T02 CCT922948-02	Worchel	University of Hawaii at Hilo	Undergraduate Training Program	8/1/2001	6/30/2006
	5 T01 CCT720246-03	Zey	Central Missouri State University	Graduate Training Program	7/1/2005	6/30/2005
	5 T01 CCT622943-02	Grimsley	Tulane University	Graduate Training Program	7/1/2003	6/30/2006
	5 T01 CCT310454-11	Nussbaum	Virginia Tech	Graduate Training Program	7/1/1989	6/30/2006
	5 T01 CCT310455-11	Martin	West Virginia University	Graduate Training Program	7/1/1988	6/30/2005
	5 T01 CCT310450-11	Guffey	West Virginia University	Graduate Training Program	7/1/1986	6/30/2005
	5 T02 CCT410463-11	George	Western Kentucky University	Undergraduate Program	7/1/1992	6/30/2006
	5 T03 CCT510461-11	Sorrell	University of Wisconsin Stout	Undergraduate and Graduate Training Program	7/1/1992	6/30/2005
	5 T01 CCT110453-11	Cullen	Yale University	Graduate Training Program	7/1/1987	6/30/2006

Table 7 – All FY 2004 Grants Grouped by NORA Priority Area

NORA Area:	Grant Number	Investigator	Institution	Project Title	Project Start	Project End
Allergic and Irritant Dermatitis						
None						
Asthma and Chronic Obstructive Pulmonary Disease						
1 R03 OH008136-01	Arif	Texas Tech		Occupational Asthmagens in Cleaners: A Focus Group Study	9/1/2004	6/30/2006
5 R01 OH002421-13	Christiani	Harvard University (School of Public Health)		Lung Disease In Chinese Textile Workers	9/30/1995	9/29/2005
5 R01 OH003457-08	Cullen	Yale University		Longitudinal Study of Isocyanate Asthma In Body Shops	9/30/2002	9/29/2007
5 R01 OH004246-03	Liu	Yale University		Isocyanate Exposure Intervention Study In Body Shops	9/30/2002	9/29/2005
5 K01 OH007608-03	Sama	Harvard University (School of Public Health)		Physiologic Characterization of Occupational Asthma	9/1/2002	8/31/2005
Fertility and Pregnancy Abnormalities						
5 K01 OH007609-02	Dardynskaia	University of Illinois At Chicago		Reproductive Outcomes Due to Past Exposure to Dioxins	8/11/2003	8/10/2006
5 R01 OH007400-04	Eskenazi	University of California Berkeley		Endocrine Disruptors and Neurodevelopmental Outcomes	9/30/2001	9/29/2005
5 R01 OH007580-02	Li	Kaiser Foundation Research Institute		Exposure to Bisphenol A & Reproductive Effect in Humans	9/30/2003	9/29/2008
5 R01 OH007575-04	Robbins	University of California Los Angeles		Male Reproductive Effects From Exposure to Boron	9/30/2001	9/29/2006
Hearing Loss						
5 R01 OH003973-03	Bohne	Washington University		Adverse Effects of Noise on Hearing: Basic Mechanisms	5/1/2001	4/30/2006
5 R01 OH003481-07	Fechter	Lome Linda Veterans Assn/Research Education		Models for Assessing Risk of Occupational Hearing Loss	9/30/2002	9/29/2006
2 R01 OH002317-19A1	Hamerick	Plattsburgh State University		Hearing Hazard Associated with Industrial Noise Exposure	8/1/1987	7/31/2007
1 R01 OH007801-01A1	Hamernik	Plattsburgh State University		Model for Prediction of Noise-induced Hearing Loss	4/1/2004	3/31/2006
1 R03 OH008000-01A1	Milz	Medical College Of Ohio At Toledo		Farm Family Total Noise Exposure Assessment	4/1/2004	3/31/2006
1 R03 OH008175-01	Qiu	Plattsburgh State University		Neural network model of noise-induced hearing loss	7/1/2004	6/30/2006
5 R01 OH007724-03	Rabinowitz	Yale University		Noise, Solvents, and Hearing Loss	9/30/2002	9/29/2005
Infectious Diseases						
5 K01 OH007614-03	Babcock	Washington University		Body Substance Exposure: Psychological Impact	9/1/2002	8/31/2005
1 R10 OH008215-01	Gershon	Mailman School of Public Health		Blood Borne Pathogen Risk in Home Healthcare Workers	9/1/2004	6/30/2008
1 R01 OH008071-01	Johnson	Tulane University Of Louisiana		Cancer Risk In Workers Exposed to Oncogenic Viruses	5/1/2004	4/30/2007
2 R01 OH008241	Leiss	Constella Group, Inc		Exposure to Blood Among Home Health Care Nurses	9/1/2004	6/30/2007
1 R01 OH008237-01	Lipscomb	University of Maryland		Blood Exposure and Primary Prevention in the Home Care	7/1/2004	6/30/2008
5 R01 OH007489-03	Mittleman	Beth Israel Deaconess Medicine		A Case-crossover Study of Sharps-related Injuries	9/1/2002	8/31/2006
1 R01 OH008229-01	Quinn	University of Massachusetts Lowell		Sharps Injuries and Blood Exposure in Homes Health Care	7/1/2004	6/30/2008
Musculoskeletal Disorders: Low Back						
5 U01 OH008083-02	Garg	University of Wisconsin Milwaukee		Low Back Pain Quantifying Risk Factors	9/30/2003	9/29/2006
1 R01 OH008007-01	Lipscomb	Duke University		Back Disorders In Union Carpenters	10/1/2003	9/30/2006
5 U01 OH007313-05	Marras	Ohio State University		Identifying Safe Load Moment Exposures for the Back	9/30/2000	9/29/2005

Table 7 – All FY 2004 Grants Grouped by NORA Priority Area

NORA Area:	Grant Number	Investigator	Institution	Project Title	Project Start	Project End
	5 R01 OH007787-03	Marras	Ohio State University	Neuro-fuzzy Prediction of Spine Loads In Response to Risk Factors	9/30/2002	9/29/2006
	5 K01 OH007996-02	Pompeii	Duke University	Back Pain & Work Disability In Health Care Workers	9/30/2003	9/29/2006
	5 R01 OH007622-02	Solomonow	Louisiana State Univ HSC New Orleans	Physiology of Cumulative Low Back Disorders	8/1/2003	7/31/2008
	5 R03 OH007995-02	Wilson	University Of Kansas Lawrence	Vibration, Proprioception, and Low Back Stability	9/30/2003	9/29/2005
Musculoskeletal Disorders: Upper Extremities						
	1 K01 OH007826-01A1	Baker	University Of Pittsburgh at Pittsburgh	Developing an Instrument to Measure Keyboarding Style Force - Repetition Interaction In A Rat Injury Model	5/1/2004	4/30/2007
	5 R01 OH003970-05	Barbe	Temple University	Exposure Response Relationship In Hand Arm Vibration	6/1/2000	5/31/2005
	5 U01 OH007312-05	Cherniack	University of Connecticut School of Med/Dent	Estimating Joint Impedance From the Surface Emg	9/30/2000	9/29/2005
	5 R03 OH007829-02	Clancy	Worcester Polytechnic Institute	Post-offer Screening and Risk Factors for CTS	9/15/2003	9/14/2005
	1 R01 OH008017-01	Evanoff	Washington University	Upper Limb Musculoskeletal Disorders: Quantifying Risk	6/1/2004	5/31/2009
	5 U01 OH007917-03	Garg	University Of Wisconsin Milwaukee	Prospective Study of UEMSD and Physical Job Stressors	9/30/2002	9/29/2006
	5 R01 OH007945-02	Gerr	University Of Iowa	In Vivo Rabbit Model of Finger Musculoskeletal Disorders	9/1/2003	8/31/2007
	5 R01 OH007786-02	King	University Of California San Francisco	Effects of Repetitive Work On Fatigue of Long Duration	9/30/2003	8/31/2007
	5 R01 OH007441-04	Lehman	University of California Berkeley	Biomechanical Effects of Industrial Eccentric Exertions	9/30/2001	9/29/2005
	5 R01 OH007793-03	Radwin	University Of Wisconsin Madison	A Model for Wrist and Elbow Musculoskeletal Disorders	9/30/2002	9/29/2005
	5 R01 OH007359-04	Rempel	University of California San Francisco	Collaborative Study: Workplace Musculoskeletal Disorders	7/1/2001	6/30/2005
	5 R01 OH007914-02	Rempel	University Of California San Francisco	Understanding Vibration Injury	9/1/2003	8/31/2007
	2 R01 OH003493-04A1	Riley	Medical College of Wisconsin	Ergonomic Interventions for Garment Work	9/1/2004	6/30/2009
	5 R01 OH007779-03	Ritz	University Of California Los Angeles	Prospective Study of Upper Extremity Musculoskeletal Disorders	9/30/2002	9/29/2005
	5 U01 OH007316-05	Silverstein	Washington State Dept Lab/Indust	Prospective Study of Upper Extremity Musculoskeletal Disorders	9/30/2000	9/29/2005
	3 U01 OH007316-04W1	Silverstein	Washington State Dept Lab/Indust	Shoulder, Low Back, Or Knee Strength Degradation	9/30/2000	9/29/2005
	5 K01 OH007838-02	Zhang	University Of Illinois Urbana-Champaign		9/1/2003	8/31/2006
Traumatic Injuries						
	5 R01 OH007931-03	Anderson	University Of Kentucky	Risk for Workplace Violence In Long-haul Truckers	9/30/2002	9/29/2005
	5 R01 OH007947-03	Blodgett	Washington State University	Spokane Workplace Domestic Violence Initiative	9/30/2002	9/29/2005
	5 R01 OH007578-04	Chapman	University of Wisconsin Madison	Wisconsin Dairy Traumatic Occupational Injury Intervention	9/30/2001	9/29/2005
	1 R01 OH007816-01A1	Gerberich	University Of Minnesota Twin Cities	Violence Against Teachers: Etiology & Consequences	5/1/2004	4/30/2007
	5 R01 OH007633-03	Glazner	University of Colorado Health Sciences Center	Surveillance Research Methods In Construction Injury	9/30/2002	9/29/2005
	5 R01 OH007558-04	Korniewicz	University of Miami Coral Gables	Evaluation of Traumatic Injuries In HCW During Surgery	9/30/2001	9/29/2005
	5 R01 OH007948-03	Lipscomb	University Of Maryland Baltimore Prof School	Homicide During Robbery: A Case-control Study	9/30/2002	9/29/2007
	5 R01 OH003897-05	Loomis	University of North Carolina Chapel Hill	Risk Factors and Controls for Falls From Heights	8/1/2003	7/31/2005
	5 R01 OH007882-02	Nussbaum	Virginia Polytechnic Inst And St Univ	Evaluation of California Initiatives to Reduce Violence	9/1/2003	8/31/2007
	5 R01 OH007934-03	Peek-asa	University Of Iowa	Strong Construction Injury Prevention Intervention	9/30/2002	9/29/2005
	3 R01 OH007565-03S1	Stafford	The Center To Protect Workers Rights		9/30/2001	9/29/2004

Table 7 – All FY 2004 Grants Grouped by NORA Priority Area

NORA Area:				Project Start	Project End
Grant Number	Investigator	Institution	Project Title		
Emerging Technologies					
1 R43 OH008041-01	Behr	Backpocket	Backpocket: Construction Safety Surveillance System	7/1/2004	12/30/2004
Indoor Environment					
1 R01 OH008117-01	Mendell	University Of California-Lawrence Berkeley Lab	Indoor Environment and Symptoms In Office Building	4/1/2004	3/31/2007
1 R03 OH007904-01A1	Yang	University of Miami	Personal Displacement Ventilation	6/1/2004	5/31/2006
5 R01 OH003692-06	Zellers	University of Michigan at Ann Arbor	Microanalytical System for Indoor Voc Monitoring	9/30/1998	5/31/2005
Mixed Exposures					
1 R01 OH008149-01	Checkoway	Fred Hutchinson Cancer Research Center	Textile Industry Exposures and Breast Cancer in Women	7/1/2004	6/30/2007
1 R01 OH008198-01	Fiedler	University of Medicine and Dentistry	Solvent Exposure: Functional Imaging and Behavior	9/1/2004	8/31/2007
1 R03 OH008024-01A1	Pang	E.O. Lawrence Berkeley National Lab	Exposure Assessment Tools for Multiple Pollutants	9/1/2004	8/31/2006
Organization of Work					
1 R01 OH008496-01	Czeisler	Brigham & Women's Hospital	Sleep Disorders Management, Health and Safety in Police	9/30/2004	9/30/2007
5 R01 OH007567-04	Czeisler	Brigham & Women's Hospital	Effects of Extended Work Hours On Intern Health & Safety	9/30/2001	9/29/2005
5 R01 OH003954-05	Eastman	Rush-Presbyterian-St Lukes Medical Center	Practical Circadian Interventions for Night Shift Work	9/30/1999	4/30/2008
5 R01 OH007820-02	Krause	University Of California San Francisco	Occupational Physical Activity and Circulatory Diseases	8/1/2003	7/31/2006
5 R01 OH007577-04	Landsbergis	Mount Sinai School of Medicine of NYU	Work Hours, Musculoskeletal Disorders and CVD Risk	9/30/2001	9/29/2005
1 R01 OH008141-01	Schieman	University of Maryland, College Park Campus	Origins and Health Impact of Relational Conflict At Work	4/1/2004	3/31/2008
5 R01 OH007554-04	Trinkoff	University of Maryland Baltimore Prof School	Extended Work Schedules and Workplace Injury In Nurses	9/30/2001	9/29/2005
Special Populations					
5 R25 OH007611-04	Arcury	Wake Forest University Health Sciences	Casa A Campo: Pesticide Safety for Farmworkers' Families	9/30/2001	9/29/2005
5 R25 OH008146-02	Bhatia	San Francisco Dept of Public Health	Jornaleros Unidos Con El Pueblo (day Laborers United)	9/30/2003	9/29/2007
3 R01 OH004192-03	Brandt-Rauf	Columbia University Health Sciences	Worker Genetic Susceptibility to Mutagenic Risk	7/1/2001	6/30/2005
1 R03 OH008126-01	Breslin	Institute for Work and Health	Work Injury and Young People: A Prospective Survey	6/1/2004	5/31/2006
5 R01 OH007592-03	Cham	University of Pittsburgh at Pittsburgh	Biomechanics of Slips In Older Adults	8/1/2002	7/31/2005
5 U01 OH008100-02	Chapman	University Of Wisconsin Madison	Midwest Nursery Grower Intervention	9/30/2003	9/29/2007
1 R01 OH007908-01A1	Dal Santo	University Of North Carolina Chapel Hill	Effect of Work Permits In Protecting Youth Workers	4/1/2004	3/31/2006
5 R01 OH007850-02	Fathallah	University Of California Davis	Evaluation of the NAGCAT Tractor Guidelines	8/1/2003	7/31/2006
5 R25 OH008143-02	Keifer	University of Washington	Community Health Intervention with Yakima Agricultural	9/1/2003	8/31/2007
1 R03 OH007821-01A2	Madigan	Virginia Polytechnic Inst And St Univ	Muscle Strength and Age Effects in Balance Recovery	8/1/2004	7/31/2006
5 R01 OH008046-02	Marlenga	Marshfield Clinic	Removing the HOOA Family Farm Exemption: Impact On Injury	9/30/2003	9/29/2006
5 R25 OH008144-02	May	Mary Imogene Bassett Hospital	Community Collaboration for Farmworker Health and Safety	9/1/2003	8/31/2007
5 R01 OH008057-02	McCauley	Oregon Health & Science University	Biomarkers of Pesticide Toxicity Among Teen Farmworkers	9/30/2003	9/29/2006
1 R25 OH008335-01	Quandt	Wake Forest University	JUSTA: Justice and Health for Poultry Workers	9/1/2004	8/31/2008
5 R01 OH004157-04	Reed	University of Kentucky	Sustained Work Indicators of Older Farmers	9/30/2001	9/29/2006

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NORA Area:	Grant Number	Investigator	Institution	Project Title	Project Start	Project End
	5 R01 OH007956-02	Roelofs	University Of Massachusetts Lowell	Nail Salon Hazards and Health Effects	9/1/2003	8/31/2006
	5 R01 OH008058-02	Schwab	Iowa State University Of Science & Tech	Evaluation of Occupational Carrying Tasks for Farm Youth	9/1/2003	8/31/2006
	1 R25 OH008334-01	Shadbeh	Oregon Law Center	Promoting Occupational Health Among Indigenous Farmworkers in Oregon	8/1/2004	7/31/2008
	1 R25 OH008378-01	Shen	Asians and Pacific Islanders for Reproductive Health	Asian Girls for Environmental Health	8/1/2004	7/31/2008
	5 R01 OH007381-05	Slatin	University of Massachusetts Lowell	Health Disparities Among Healthcare Workers	9/30/2000	9/29/2005
	5 R03 OH007840-02	Tsai	Seattle University	Occupational Health of Immigrants Working In Restaurants	9/1/2003	8/31/2005
Cancer Research Methods						
	5 R01 OH007590-03	Brandt-Rauf	Columbia University Health Sciences	P53 Biomaker and Intervention In Occupational Cancer	6/1/2002	5/31/2005
	5 R01 OH007871-03	Richardson	University Of North Carolina Chapel Hill	Susceptibility and Occupational Radiation Risks	9/30/2002	9/29/2005
Control Technology						
	5 R03 OH007836-02	Ashley	University Of South Florida	Decay of Acclimation and Time for Re-acclimation	9/30/2003	9/29/2005
	5 R01 OH007751-03	Heasley	West Virginia University	Integrated Stability Mapping System for Mines	9/1/2002	8/31/2005
	5 R01 OH007727-03	Hill	UTD, Inc.	Improved Health and Safety In Mining Through Helical Drilling and Rock Bolt Anchoring	9/30/2002	9/29/2006
	5 R01 OH007739-03	Kemeny	University Of Arizona	Use of Digital Imagery to Characterize Rock Masses	9/1/2002	8/31/2005
	5 R01 OH007679-03	Lu	University of Cincinnati	Measurements and Control of Diesel Emissions In Underground Mines	9/1/2002	8/31/2005
	5 R01 OH007732-03	Luo	West Virginia University	Engineering Control of Longwall Machine Noises	9/1/2002	8/31/2005
	2 R44 OH007673-02A1	Masterman	Robert C. Byrd Technology Center	Bioelectric Telemetry System for Fire Fighter Safety	9/1/2004	8/31/2006
	1 R43 OH007963-01A1	Rajagopalan	Nanoscale Materials, Inc.	From Nanoparticles to Novel Protective Garments	7/1/2004	12/30/2004
	1 R43 OH007662-01A1	Sun	AAC International	A Laser-Based Device for Work Site Stability Assessment	9/1/2004	2/28/2005
	2 R44 OH004173-02A1	Wiesmann	Biostar, Inc.	SCBA Oximetry for Fire Fighter Physiologic Monitoring	9/30/2000	6/30/2006
Exposure Assessment						
	5 R01 OH007680-03	Baum	Oak Crest Institute of Science	Real-time In Situ Aerosol Monitoring In Mine Atmospheres	9/1/2002	8/31/2006
	1 R01 OH007493-01A2	Bunge	Colorado School of Mines	Dermal Absorption of Chemicals from Liquid Mixtures	9/1/2004	6/30/2007
	5 R01 OH003900-03	Cheng	Lovelace Biomedical & Evironmental Res	Inhalation Dosimetry/Exposure Index of Fiber Aerosol	9/1/2002	8/31/2007
	1 R01 OH007866-01A1	Day	University of Pittsburgh	Health Effects of Radiation Exposures in Russian Workers	9/1/2004	6/30/2007
	2 R44 OH007465-02	Faull	Eltron Research, Inc	Real-time Personal Monitor for the Drycleaning Industry	9/1/2001	8/31/2006
	5 R01 OH007729-03	Gautam	West Virginia University	Real-time, In-use Pm Measurement From Diesel Engines	9/1/2002	8/31/2005
	5 R01 OH004084-03	Harris	Virginia Commonwealth University	Pesticide Dose Monitoring In Turf Applicators	8/1/2002	7/31/2005
	5 R44 OH007471-03	Hooker	Nanomaterials Research Llc	Novel Hydrogen Sulfide Sensors for Portable Monitors	9/16/2003	9/15/2005
	5 R01 OH007529-03	Kasting	University of Cincinnati	Improved Methods for Dermal Exposure Estimation	9/1/2002	8/31/2006
	5 R01 OH007803-02	Loomis	University Of North Carolina Chapel Hill	Chrysotile: New Exposure Indices and Cancer Epidemiology	9/30/2003	9/29/2007

Table 7 – All FY 2004 Grants Grouped by NORA Priority Area

NORA Area:	Grant Number	Investigator	Institution	Project Title	Project Start	Project End
	1 K01 OH008029-01A1	Mainelis	Rutgers The State University Of New Jersey New Brunswick	Evaluation of Portable Samplers for Viable Bioaerosols	9/1/2004	8/31/2007
	5 R01 OH007598-02	Nylander-French	University of North Carolina, Chapel Hill	Dermal Exposure to 1,6-hexamethylene Diisocyanate	8/1/2003	7/31/2006
	5 R01 OH007976-02	Pinney	University Of Cincinnati	B-2 Microglobulin: Renal Biomarker Workplace U Exposure	9/30/2003	9/29/2005
	5 R21 OH007632-03	Qu	New York University School of Medicine	Validation of Biomarkers In Humans Exposed to PAHs	1/1/2002	12/31/2004
	5 R01 OH007841-03	Reynolds	Colorado State University	New Methods for Evaluation of Organic Dust Aerosols	8/1/2002	7/31/2007
	5 R01 OH007495-02	Rosenman	Michigan State University	Genetic/exposure Interaction In Beryllium Disease	8/1/2003	7/31/2006
	5 R03 OH007834-02	Symanski	University Of Texas Health Science Center Houston	Evaluation of Exposure Measurement Error	9/30/2003	8/31/2005
	5 R01 OH003658-03	Thrall	Battelle Pacific Northwest Laboratories	Dermatopharmacokinetics: In Vivo Analysis of Solvents	9/30/2003	9/29/2006
	2 R01 OH002984-07A1	Vincent	University of Michigan at Ann Arbor	Workplace Aerosol Sampling At Realistic Low Windspeeds	9/1/1994	8/31/2007
Health Services						
	5 R03 OH007512-02	Maupome	Kaiser Foundation Research Institute	Sharp Instrument Injuries and Use of Clinical Services	9/30/2003	9/29/2005
	5 K01 OH007922-02	Rischitelli	Oregon Health & Science University	Geographic Variation In Spine Care Among Injured Workers	9/30/2003	9/29/2005
Intervention Effectiveness						
	5 U01 OH008104-02	Anger	Oregon Health & Science University	Effectiveness of Computer-based Safety Training In Vineyard Workers	9/30/2003	9/29/2007
	5 U50 OH008108-02	Bean	Ohio State University	Ohio Regional Center for Agricultural Disease and Injury	9/30/2003	9/29/2006
	5 R01 OH007647-03	Brisson	University of Quebec	Intervention Research On Work Organization Factors	9/30/2002	9/29/2005
	5 R01 OH007490-03	Conrad	University of Illinois at Chicago	Designing Ergonomic Interventions for the Fire Service	9/30/2002	9/29/2005
	5 R03 OH007843-02	Ehrlich	George Washington University	Sun Protection and Skin Cancer Awareness In Watermen	8/1/2003	7/31/2005
	1 R25 OH008319-01	Grayson	University of Missouri-Rolla	Western U.S. Mining Safety and Health Training and Translation Center	9/1/2004	8/31/2009
	5 R44 OH007461-03	Harrington	Harrington Software Associates	Occupational Safety and Health Training for Teleworkers	9/15/2003	9/14/2005
	5 R21 OH007757-02	Kidd	Arizona State University	Evaluating Preassembly of Roof Structural Components	9/30/2002	1/31/2005
	1 R01 OH008153-01	May	Mary Imogene Bassett Hospital	Evaluation of an Ergonomically Improved Apple Bag	5/1/2004	4/30/2007
	5 R01 OH007817-02	Mendeloff	University Of Pittsburgh at Pittsburgh	Causes and Effects of Compliance With OSHA Standards	6/1/2003	5/31/2006
	5 U01 OH008091-02	Miles	University Of California Davis	Ergonomic Partnership to Address Treefruit Worker Injury	9/30/2003	9/29/2007
	5 R01 OH003884-04	Parker	Park Nicollet Institute	Effectiveness of Machine Guarding Intervention	9/30/2001	9/29/2007
	5 U50 OH008085-02	Reynolds	Colorado State University	High Plains Intermountain Center for Ag Health & Safety	9/15/2003	9/14/2006
Risk Assessment Methods						
	5 R01 OH007864-03	Moolgavkar	Fred Hutchinson Cancer Research Center	Stochastic Models for Radiation Carcinogenesis: Temporal Factors and Dose-Rate Effects	9/30/2002	9/29/2005
	1 R01 OH008087-01	Xue	Yeshiva University	Occupational Cohorts: Confounder/effect-modifier Models	9/1/2004	8/31/2007

Table 7 – All FY 2004 Grants Grouped by NORA Priority Area

NORA Area:	Grant Number	Investigator	Institution	Project Title	Project Start	Project End
Social and Economic Consequences of Occupational Injury and Disease						
	5 R01 OH004069-04	Franklin	University of Washington	Disability Risk In Work-related Musculoskeletal Injury	9/30/2001	9/29/2006
	5 K01 OH007999-01	Galizzi	University Of Massachusetts Lowell	On-the-Job Inquiry: Employment History and Hidden Losses	9/1/2003	8/31/2006
	5 R01 OH007811-02	Shannon	Mc Master University	Use of Health and Social Services Following Work Injury	9/15/2003	9/14/2005
	1 R01 OH007900-01A1	Tompa	Institute For Work And Health	Post-accident Earning and Benefits Adequacy and Equity	6/30/2004	6/29/2007
	5 R01 OH003699-05	Welch	The Center to Protect Workers Rights	Economic Impact of Injury/illness In Career Roofers	9/30/2001	9/29/2005
Surveillance Research Methods						
	5 R01 OH007596-03	Boden	Boston University Medical Campus	Capture-recapture Estimates of Workplace Injury Rates	9/1/2002	8/31/2005
	5 U01 OH007292-04	Bonauto	Washington State Dept Lab/Indust	Occupational Surveillance Modules for Prevention	7/1/2001	6/30/2005
	5 U01 OH007302-04	Davis	Massachusetts State Dept of Pub Health	Core Occupational Health Surveillance In Massachusetts	7/1/2001	6/30/2005
	5 R01 OH003979-04	Dement	Duke University	Surveillance Methods for Health Care and Related Workers	9/30/2001	9/29/2005
	5 R01 OH007830-02	Dischinger	University of Maryland Baltimore Prof School	A Comprehensive Surveillance of Occupational Injury In Maryland	7/10/2003	7/9/2006
Other Occupational Safety and Health						
	1 U60 OH008342-01	Archer	Oklahoma State Department of Health	(FACE) Oklahoma	9/30/2002	9/29/2006
	1 R13 ES013378-01	Arcury	Wake Forest University Health Sciences	Farmworker Environmental Health Research Comparable Data	8/1/2004	7/31/2005
	1 U60 OH008337-01	Ball	Utah Department of Health	Sensor: Utah; State-based Surveillance of Work-related Burns	9/30/2002	9/29/2005
	3 R01 OH007366-03S1	Barbeau	Dana-Farber Cancer Institute	Physical/social Hazards--jobs, Race, Gender and Health	9/30/2001	9/29/2004
	1 U60 OH008344-01	Bender	Minnesota Department of Health	(FACE) Minnesota	9/1/2001	8/31/2006
	1 U60 OH008345-01	Bost	New Jersey Department of Health & Senior Services	(FACE) New Jersey	9/1/2001	8/31/2006
	1 R13 OH823628-01	Buchan	Colorado State University	High Plains Intermountain Center for Ag Health & Safety Conf	5/21/2004	5/21/2005
	5 U36 CC319276-02	Buist	Kaiser Permanente	Occupational COPD in Kaiser Permanente Northwest - PERT		9/30/2005
	5 U01 OH007306-04	Cameron	Michigan State Dept of Community Health	Core Occupational Health Surveillance In Michigan	9/30/2000	9/29/2004
	1 U60 OH008346-01	Campbell	NC Department of Health & Human Services	Enhancement of NC State-based Occupational Surveillance (n Capacity)	9/30/2002	9/29/2005
	5 U50 CC304522-14	Champion	Minority Health Professionals Foundation	Minority Health Professional Foundation Biomedical Sciences	9/30/1989	9/29/2005
	1 U60 OH008336-01	Cohen	Washington State Department of Labor & Industries	(FACE) Washington	9/1/2002	8/31/2006
	1 U60 OH008331-01	Davis	Massachusetts Dept of Public Health	(FACE) Massachusetts	9/1/2001	8/31/2006
	1 U60 OH008332-01	Davis	Massachusetts Dept of Public Health	SENSOR: Massachusetts; Surveillance of Work-related Asthma	9/30/2002	9/29/2005
	5 U01 OH008110-02	Donham	University Of Iowa	Certified Safe Farm Evaluating Health Insurance Claims	9/1/2003	8/31/2007
	5 R44 OH003881-03	Echols	Riverbend Instruments, Inc.	Simple Device/measure Omnidirectional Germicidal UV Rad	9/30/2001	9/29/2005

Table 7 – All FY 2004 Grants Grouped by NORA Priority Area

NORA Area:	Grant Number	Investigator	Institution	Project Title	Project Start	Project End
	1 R25 OH008296-01	Eijkemans	World Health Organization (WHO)	WHO Global Occupational Health Programme	9/29/2004	9/28/2007
	5 U50 OH007544-04	Fenske	University of Washington	Pacific Northwest Agricultural Safety and Health Center	9/30/2001	9/29/2006
	5 R01 OH003915-03	Fleming	University of Miami-Medical	Surveillance of Mortality and Morbidity In Us Workers	9/1/2002	8/31/2005
	5 U36 CC300430-20AM	Franzblau	University of Michigan	Evaluation of Digital Chest Radiographs for Pneumoconioses - PERT		9/30/2005
	5 U01 OH007308-04	Gelberg	Bureau of Occupational Health	Core Surveillance of Occupational Health In New York	7/1/2001	6/30/2005
	1 U60 OH008330-01	Gelberg	New York Sate Department of Health	(FACE) New York	9/1/2001	8/31/2006
	1 U60 OH008328-01	Hanrahan	Department of Health and Family Services	(FACE) Wisconsin	9/1/2001	8/31/2006
	1 U60 OH008327-01	Harrison	California Department of Health Services	Sensor: California	9/30/2002	9/29/2005
	1 U60 OH008326-01	Harrison	California Department of Health Services	(FACE) California	9/1/2001	8/31/2006
	5 U01 OH007307-04	Harrison	Public Health Institute	Core Surveillance Model Program In California	9/30/2000	9/29/2004
	5 U50 CC411492-05	Haynes	Morehouse College	IMHOTEP	9/9/1994	1/28/2005
	1 U10 OH008225-01	Herbert	Mount Sinai School of Medicine	WTC Responder Health Consortium Clinical Center	7/15/2004	7/14/2009
	1 U60 OH008325-01	Hetzler	Nebraska Workforce Development, Dept of Labor	(FACE) Nebraska	9/1/2002	8/31/2006
	1 U60 OH008324-01	Heumann	Oregon State University	Oregon Face Project	9/1/2002	8/31/2006
	1 U60 OH008348-01	Heumann	Oregon Department of Human Services	Sensor: Oregon; State-based	9/30/2002	9/29/2005
	1 U60 OH008340-01	Hull-Jilly	Alaska Department of Health and Social Services	(FACE) Alaska	9/1/2001	8/31/2006
	1 U60 OH008349-01	John	Texas Department of Health	Sensor: Texas; Occupational Pesticide Poisoning, TX	9/30/2002	9/29/2005
	1 U60 OH008397-01	Kalinowski	Michigan Department of Labor and Economic Growth	Sensor - Michigan	9/30/2002	9/29/2005
	1 U10 OH008243-01	Kelly	New York City Fire Department	NYC Fire Dept. Clinical Center for WTC Medicals	4/1/2004	4/1/2009
	1 U60 OH008343-01	Kennedy	West Virginia Department of Health & Human Services	(FACE) West Virginia	9/1/2001	8/31/2006
	1 U19 OH008308-01	Kleiner	Virginia Polytechnic Institute & State University	Program Project to Support Construction Safety and Health	9/15/2004	6/30/2009
	5 U01 OH007277-11	Knutson	Council of State and Territorial Epidemiologists	Building Environmental Epidemiology Capacity At the State Level	9/30/1991	9/30/2005
	1 U60 OH008398-01	Kraemer	Iowa Department of Public Health	(FACE) Iowa	9/1/2001	8/31/2006
	5 U01 OH007869-03	Lamar	International Association Fire Fighters	Hazardous Substance Training for Emergency Responders	9/30/2002	9/29/2007
	5 U50 OH008107-02	Lee	Marshfield Clinic	National Children's Center for Rural & Ag Health & Safety	9/30/2003	9/29/2008
	5 U50 OH007541-04	Levin	University of Texas Health Center at Tyler	Southwest Center for Agricultural Safety and Health	9/30/2001	9/29/2006
	1 U10 OH008232-01	Levin	Mount Sinai School of Medicine	WTC RHC Data and Coordination Center	3/15/2004	3/14/2009
	1 U53 OH008399-01	Lim	Maine Department of Labor	Maine; Occupational Safety Core Surveillance Indicator Program (n Capacity)	9/30/2002	9/29/2005
	1 U10 OH008275-01	Markowitz	Research Foundation of CUNY	Queens Ground Zero Workers Health Watch	4/1/2004	3/31/2009
	1 U60 OH008341-01	Mauer	New York State Department of Health	SENSOR: New York; Sentinel Event Notification of Occupational Risks	9/30/2002	9/29/2005
	5 U50 OH007542-04	May	Mary Imogene Bassett Hospital	The Northeast Center of Agricultural Safety and Health	9/30/2001	9/29/2006
	5 U50 OH007547-04	McKnight	University of Kentucky	Southeast Center for Agricultural Health and Injury Prevention	9/30/2001	9/29/2006

Table 7 – All FY 2004 Grants Grouped by NORA Priority Area

NORA Area:	Grant Number	Investigator	Institution	Project Title	Project Start	Project End
	1 R13 OH923627-01	Miles	University of California	Stooped Posture in the Workplace	5/21/2004	5/21/2005
	1 R13 OH623805-01	Nelson	University of Oklahoma	Conference on Control Banding in the United States	5/21/2004	5/21/2005
	5 U36 CC300430-02	Nicas	University of California	Risk Assessment for Airborne Bioterrorism Agents - PERT		3/1/2005
	5 U60 OH00300478-19	Nyquist	National Academy of Sciences, Nat. Res.	Operation of A Post Doctoral Research Associateship Program	5/1/1983	7/31/2004
	1 U10 OH008216-01	Parkinson	Research Foundation of the NY State University	Clinical Services for World Trade Center Responders	7/15/2004	7/14/2009
	1 U60 OH008329-01	Peck	Michigan Department of Labor and Economic Growth	(FACE) Michigan	9/30/2002	9/29/2006
	1 U10 OH008242-01	Prezant	New York City Fire Department	NYC Fire Dept. Data Coordinating Center for WTC Medicals	4/1/2004	4/1/2009
	1 U10 OH008223-01	Reibman	NY University School of Medicine	NYU World Trade Center Responder Health Consortium	8/13/2004	8/12/2009
	5 U36 CC300430-20	Riedel	ASPH Fellowship	ASPH for the Improvement of Interaction Between Phase and PHPs	9/28/1981	9/27/2004
	5 U50 OH007551-04	Sabella	East Carolina University	A Southeastern Regional Center for Agromedicine	9/30/2001	9/29/2006
	5 U50 OH007548-04	Sanderson	University of Iowa	Great Plains Center for Agricultural Health	9/30/2001	9/29/2006
	5 U50 OH007550-04	Schenker	University of California Davis	Agricultural Health and Safety Center of Uc Davis	9/30/2001	9/29/2006
	1 U53 OH008347-01	St. Louis	Connecticut Department of Public Health	Connecticut; Occupational Disease Surveillance Enhancement Project (n Capacity)	9/30/2002	9/29/2005
	1 U54 OH008307-01	Stafford	The Center to Protect Workers' Rights, Inc.	Centers for Construction Safety and Health	9/1/2004	6/30/2009
	1 U10 OH008239-01	Udasin	UMDNJ-Robert W Johnson Medical School	Clinical Center For Monitoring Health In WTC Responders	7/1/2004	6/30/2009
	1 U60 OH008338-01	Valiante	New Jersey Department of Health and Senior Services	Sensor: New Jersey; Surveillance of Occupational Asthma and Silicosis	9/30/2002	9/29/2005
	1 U53 OH008339-01	Voorhees	New Mexico Department of Health	New Mexico; Worker Health Surveillance (n Capacity)	9/30/2002	9/29/2005
	5 R01 OH008070-02	Wilkins	Ohio State University	Adherence to the NAGCAT and Injury Risk Reduction	9/30/2003	9/29/2006
	1 U60 OH008350-01	Williams	Kentucky Department for Public Health	(FACE) Kentucky	9/1/2002	8/31/2006
Training and Education						
Education and Research Centers (ERC)						
	5 T42 CCT310419-11	Agnew	Johns Hopkins University	Education and Research Center	7/1/1977	6/30/2007
	5 T42 CCT412874-08	Brooks	University of South Florida	Education and Research Center	7/1/1997	6/30/2007
	5 T42 CCT122961-02	Christiani	Harvard School of Public Health	Education and Research Center	7/1/1977	6/30/2008
	5 T42 CCT510420-11	Clark	University of Cincinnati	Education and Research Center	7/1/1977	6/30/2005
	5 T42 CCT522954-02	Conroy	University of Illinois at Chicago	Education and Research Center	7/1/1977	6/30/2008
	5 T42 CCT610417-11	Delclos	University of Texas Health Science Center	Education and Research Center	7/1/1977	6/30/2005
	5 T42 CCT510422-11	Greaves	University of Minnesota	Education and Research Center	7/1/1977	6/30/2007
	2 T42 CCT924019-01	Hinds	UCLA	Education and Research Center	7/1/1978	6/30/2009
	5 T42 CCT210425-11	Landrigan	Mount Sinai School of Medicine	Education and Research Center	7/1/1978	6/30/2005
	5 T42 CCT810426-11	Moser	University of Utah	Education and Research Center	7/1/1978	6/30/2007
	2 T42 CCT424022-01	Ostenstad	University of Alabama at Birmingham	Education and Research Center	10/1/1981	6/30/2006
	5 T42 CCT510428-11	Robins	University of Michigan	Education and Research Center	7/1/1982	6/30/2005
	5 T42 CCT422952-02	Rogers	University of North Carolina at Chapel Hill	Education and Research Center	7/1/1977	6/30/2006

Table 7 – All FY 2004 Grants Grouped by NORA Priority Area

NORA Area:				Project Start	Project End
Grant Number	Investigator	Institution	Project Title		
5 T42 CCT010418-11	Seixas	University of Washington	Education and Research Center	7/1/1977	6/30/2005
5 T42 CCT910427-11	Spear	University of California - Berkeley	Education and Research Center	7/1/1982	6/30/2007
5 T42 CCT722958-02	Sprince	University of Iowa	Education and Research Center	7/1/2000	6/30/2008
Training Project Grants (TPG)					
1 T02 CCT324005-01	Anna	Millersville University	Undergraduate Training Program	7/1/2004	6/30/2009
2 T01 CCT523999-01	Bisesi	Medical College of Ohio	Graduate Training Program	7/1/2001	6/30/2005
5 T01 CCT810435-11	Blehm	Colorado State University	Graduate Training Program	7/1/1975	6/30/2005
1 T02 CCT424008-01	Carter	North Carolina A&T State University	Undergraduate Training Program	7/1/2004	6/30/2009
5 T02 CCT815868-06	Covington	Trinidad State Junior College	Undergraduate Program	7/1/1999	6/30/2007
5 T01 CCT910446-11	Crutchfield	University of Arizona	Graduate Training Program	8/1/1985	6/30/2005
5 T01 CCT110453-11	Cullen	Yale University	Graduate Training Program	7/1/1987	6/30/2006
5 T01 CCT420005-04	Darcey	Duke University	Graduate Training Program	7/1/2001	6/30/2006
5 T15 CCT010469-11	Dzugan	Alaska Marine Safety Education Assoc.	Continuing Education Program	7/1/1993	6/30/2006
5 T01 CCT110456-11	Ellenbecker	University of Massachusetts-Lowell	Graduate Training Program	1/1/1991	6/30/2005
5 T01 CCT322951-02	Emmett	University of Pennsylvania	Graduate Training Program	9/30/1999	6/30/2008
2 T01 CCT424007-01	Feigley	University of South Carolina	Graduate Training Program	7/1/1979	6/30/2009
2 T02 CCT424006-01	Figueroa	University of North Alabama	Undergraduate Training Program	7/1/2001	6/30/2005
5 T01 CCT520355-03	Fonooni-Fard	University of Minnesota - Duluth	Graduate Training Program	9/29/2002	6/30/2009
2 T01 CCT423997-01	Frumkin	Emory University	Graduate Training Program	7/1/1992	6/30/2007
5 T01 CCT020374-03	Funk	Oregon State University	Graduate Training Program	7/1/2002	6/30/2005
5 T02 CCT410463-11	George	Western Kentucky University	Undergraduate Program	7/1/1992	6/30/2006
5 T01 CCT022953-02	Gonzales	University of Puerto Rico	Graduate Training Program	7/1/1980	6/30/2008
5 T01 CCT622943-02	Grimsley	Tulane University	Graduate Training Program	7/1/2003	6/30/2006
5 T01 CCT310450-11	Guffey	West Virginia University	Graduate Training Program	7/1/1986	6/30/2005
5 T01 CCT020346-03	Hammer	Portland State University	Graduate Training Program	7/1/2002	6/30/2005
5 T01 CCT122962-02	Henning	University of Connecticut	Graduate Training Program	7/1/2003	6/30/2006
5 T03 CCT822949-02	Jensen	Montana Tech	Undergraduate and Graduate Training Program	7/1/1986	6/30/2005
2 T01 CCT424002-01	Kahlil	University of Miami	Graduate Training Program	7/1/1993	6/30/2009
5 T03 CCT410451-11	Kraemer	Murray State University	Undergraduate and Graduate Training Program	7/1/1986	6/30/2008
5 T01 CCT310455-11	Martin	West Virginia University	Graduate Training Program	7/1/1988	6/30/2005
5 T01 CCT310445-11	McCauley	University of Pennsylvania	Graduate Training Program	8/1/1985	6/30/2007
2 T01 CCT124023-01	Meyer	University of Connecticut Health Center	Graduate Training Program	7/1/1996	6/30/2009
5 T01 CCT810468-10	Mueller	University of Colorado	Graduate Training Program	7/1/1993	6/30/2005
5 T01 CCT310454-11	Nussbaum	Virginia Tech	Graduate Training Program	7/1/1989	6/30/2006
2 T01 CCT624012-01	Phillips	University of Oklahoma	Graduate Training Program	7/1/1999	6/30/2007
5 T01 CCT510467-11	Rosenthal	Purdue University	Graduate Training Program	7/1/1993	6/30/2006
5 T02 CCT110457-11	Ryan	Central Maine Technical College	Undergraduate Training Program	7/1/1991	6/30/2007
5 T01 CCT910442-11	Samimi	San Diego State University	Graduate Training Program	8/1/1985	6/30/2005

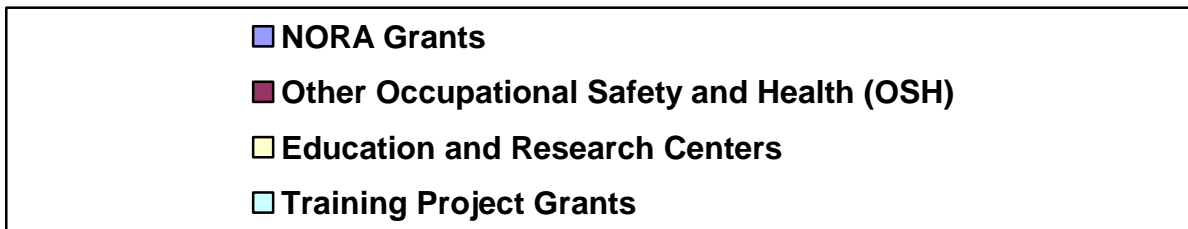
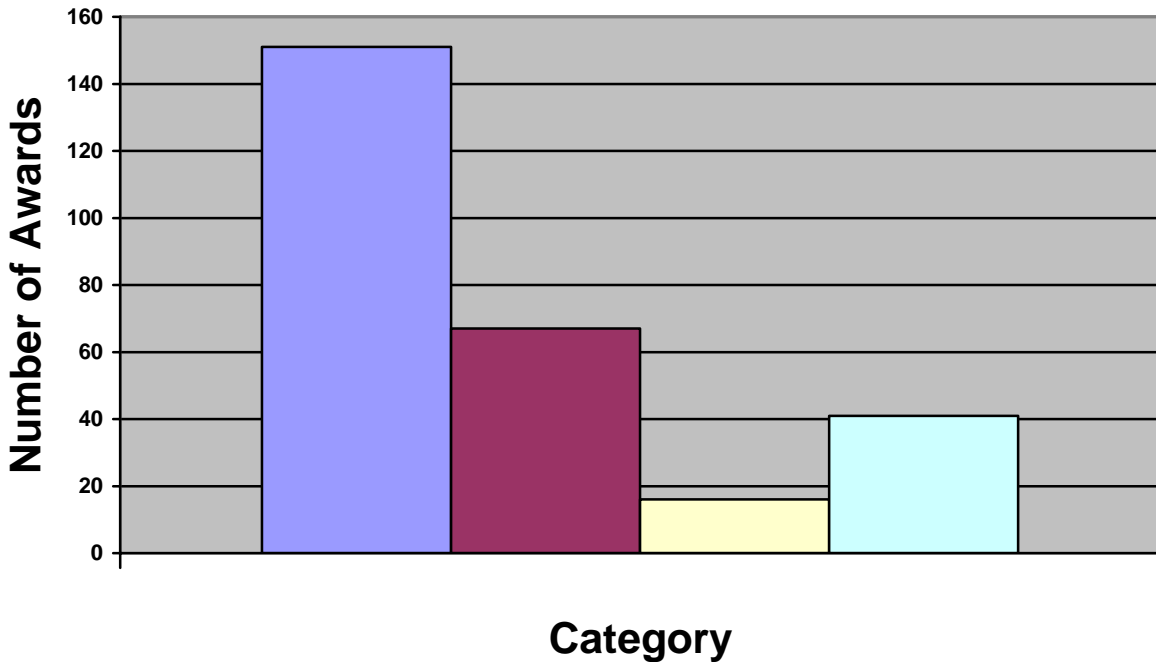
Table 7 – All FY 2004 Grants Grouped by NORA Priority Area

NORA Area:					
Grant Number	Investigator	Institution	Project Title	Project Start	Project End
5 T01 CCT310441-11	Schwerha	University of Pittsburgh	Graduate Training Program	7/1/1986	6/30/2006
2 T01 CCT624004-01	Smith	Texas Tech University	Graduate Training Program	5/1/1981	6/30/2005
5 T03 CCT510461-11	Sorrell	University of Wisconsin - Stout	Undergraduate and Graduate Training Program	7/1/1992	6/30/2005
5 T01 CCT422950-02	Sprau	East Carolina University	Graduate Training Program	7/1/1992	6/30/2006
5 T01 CCT420339-03	Stobbe	Embry-Riddle Aeronautical University	Graduate Training Program	9/29/2002	6/30/2005
5 T02 CCT922948-02	Worchel	University of Hawaii at Hilo	Undergraduate Training Program	8/1/2001	6/30/2006
5 T01 CCT720246-03	Zey	Central Missouri State University	Graduate Training Program	7/1/2005	6/30/2005

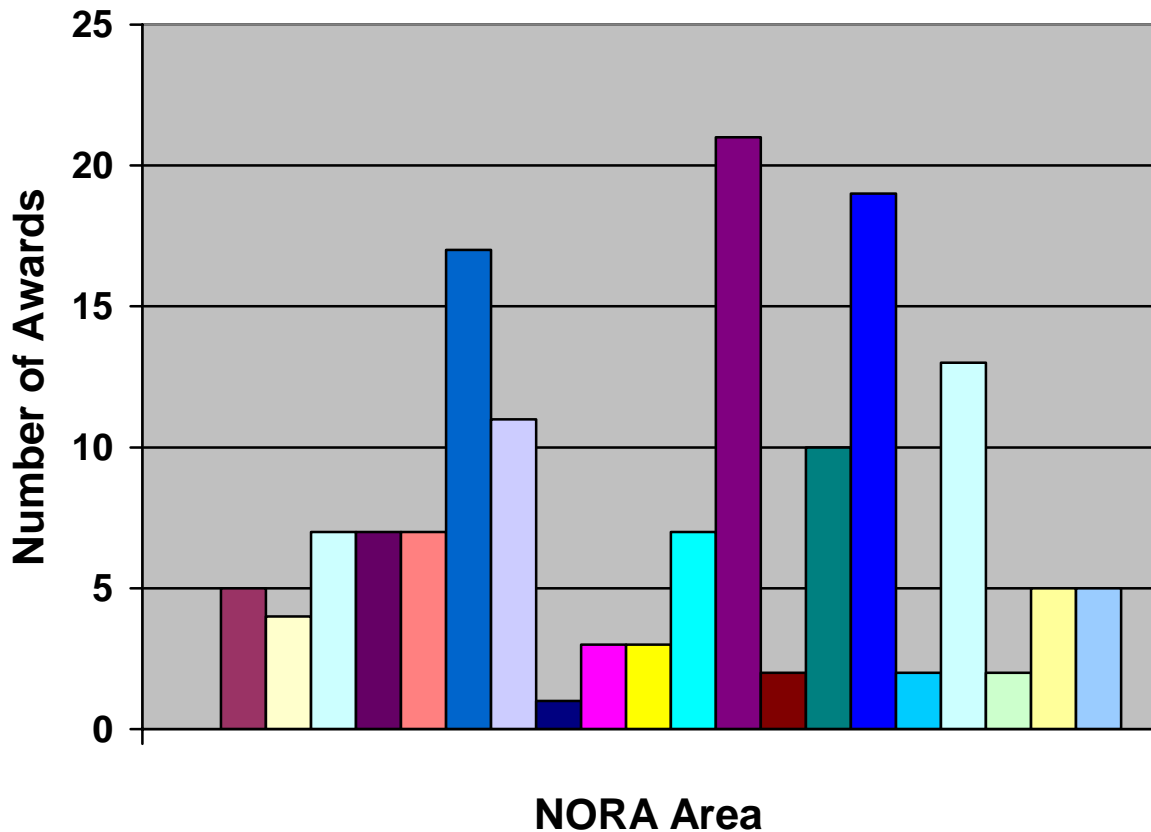


Composites of the FY 2004 awards listed in the previous table (Table 7) are presented in the following four charts.

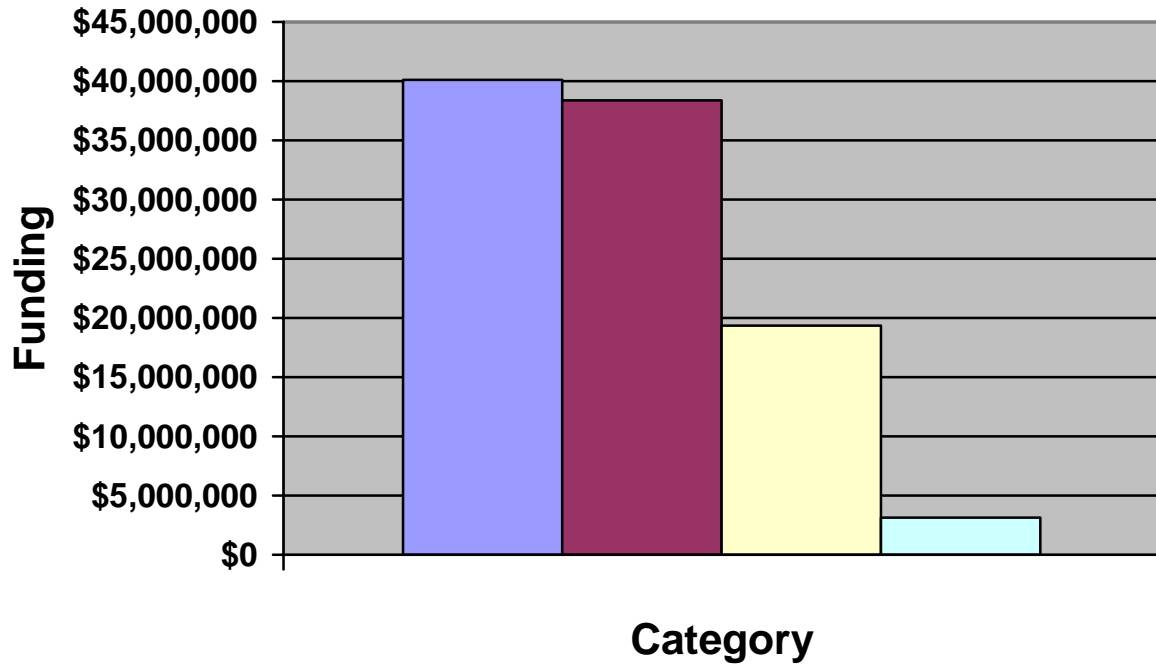
Number of FY 2004 Awards Categorized by NORA, OSH, ERC, and TPG



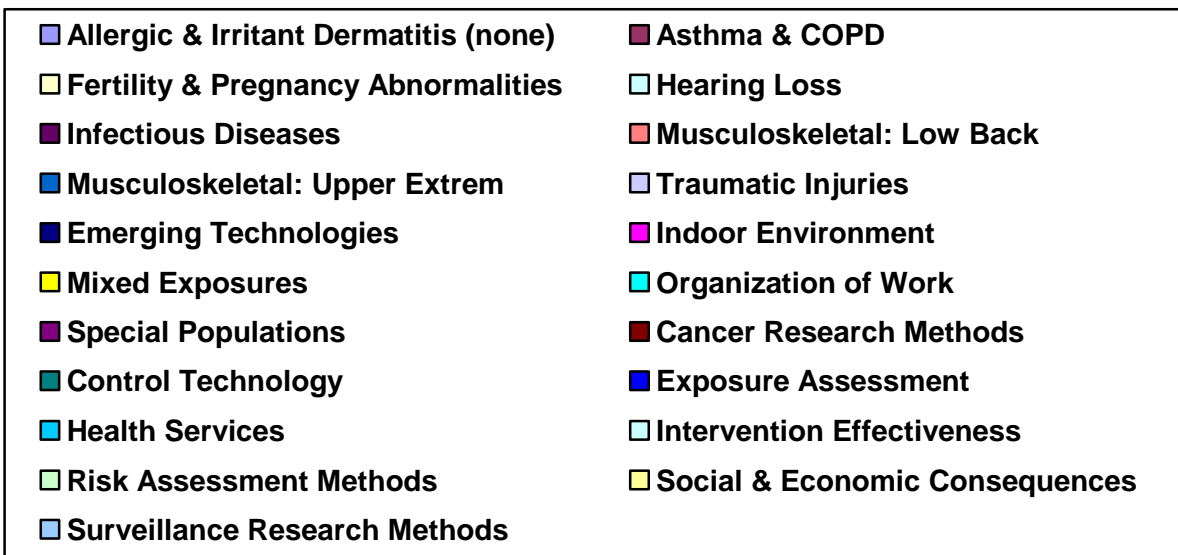
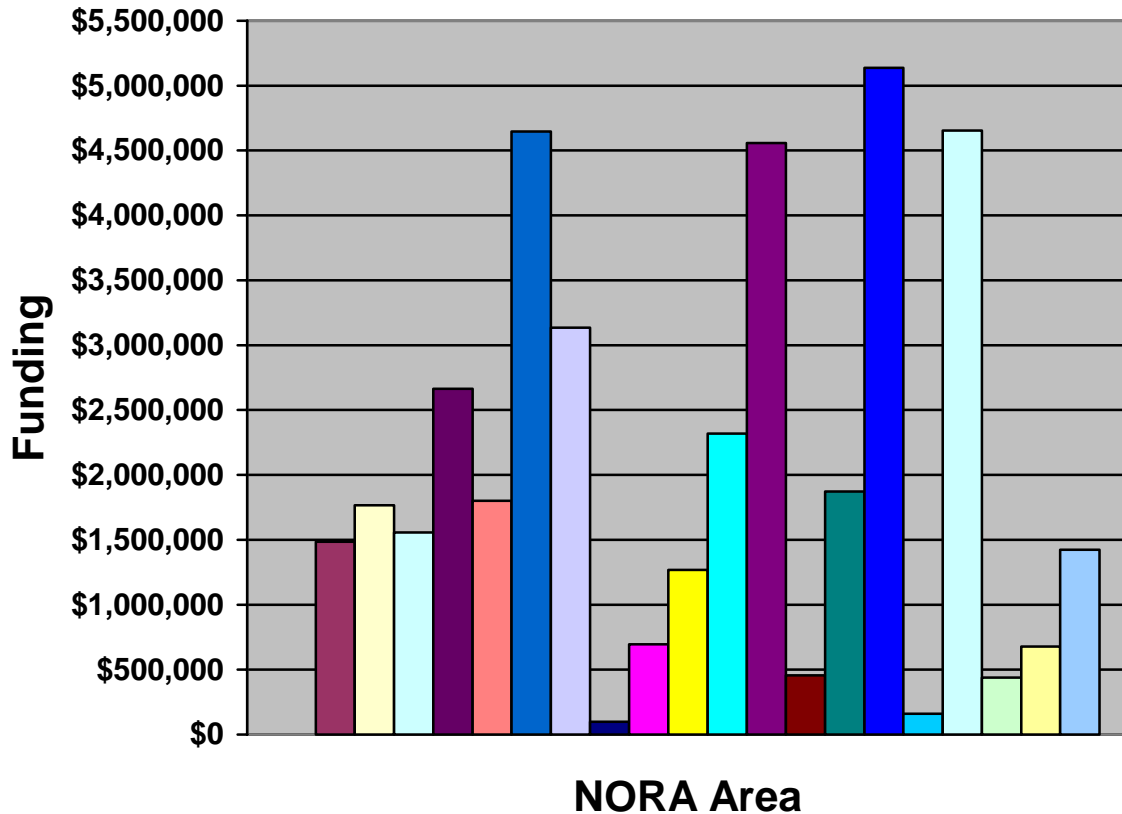
Number of FY 2004 NORA Awards Categorized by NORA Area



FY 2004 Funding Categorized by NORA, OSH, ERC, and TPG



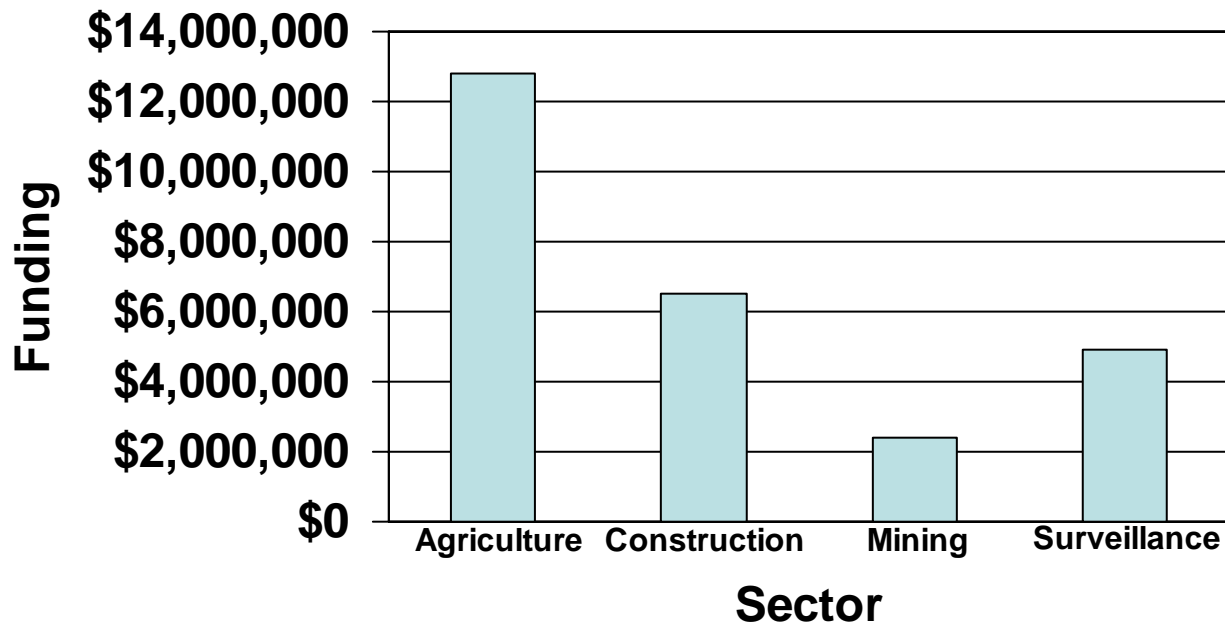
FY 2004 NORA Funding Categorized by NORA Area



To most effectively address research needs in specific sectors (such as construction, mining, agriculture, and surveillance), NIOSH applies a matrix of coordinated research in some or all of the 21 NORA priority areas, as well as other occupational safety and health program areas, as appropriate for each sector.

The following chart displays FY 2004 NIOSH funding by sector.

Funding by Sector



Links to Important References:

To sign up for the NIOSH OEP listserv which transmits updates about OEP programs by email:

<http://www.cdc.gov/niosh/oep/oepsignup.html>

NIOSH OEP Web site:

<http://www.cdc.gov/niosh/oep/>

NIOSH main Web site:

<http://www.cdc.gov/niosh/homepage.html>

CDC main Web page:

<http://www.cdc.gov/>

Information on NORA:

<http://www2a.cdc.gov/NORA/default.html>

Information on r2p:

<http://www.cdc.gov/niosh/r2p/>

Grants.gov:

<http://www.grants.gov/>

NIH Guide for Grants and Contracts:

<http://grants1.nih.gov/grants/guide/index.html>

Application forms posted on the NIH Web site:

<http://grants1.nih.gov/grants/forms.htm>

NIH Grants Policy Statement:

http://grants1.nih.gov/grants/policy/nihgps_2003/index.htm

HHS GrantsNet:

<http://www.hhs.gov/grantsnet/>

Computer Retrieval of Information on Scientific Projects (CRISP):

<http://www.crisp.cit.nih.gov/>