Training Program Grant Final Progress Report

T01/CCT020374
Occupational Safety and Health Training Program

T01 OH008407-01
Occupational Safety and Health Training Program Continuation

Oregon State University

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For the period 1 July 2002 – 30 June 2006

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26 September 2006

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Abstract

Oregon State University's "Occupational Safety and Health Training Grant" was created to provide students with a sound educational experience in occupational health and safety, including academic coursework, practical experience and research. The program was a coordinated graduate degree program in occupational safety and health within the Departments of Industrial & Manufacturing Engineering (IME) and Public Health (PH) at Oregon State University. Separately administered academic programs led to a Masters of Science (M.S.) degree in Industrial Engineering with an emphasis in human systems engineering, or an M.S. degree in Environment, Safety and Health Sciences with an emphasis in occupational safety.

The program was designed to prepare students for careers as ergonomists, human factors engineers, and safety specialists in both the private and governmental sectors. The core curriculum for the program consisted of 5 quarter courses in Public Health focusing on safety and industrial hygiene, and 5 quarter courses in Industrial and Manufacturing Engineering focusing on ergonomics and human factors engineering. Additional courses within the program of each student were selected to fulfill the requirements of each academic degree program (IME or PH) and to reflect each student's interests, background, and employment objectives. All students were required to complete an M.S. thesis directed at a research topic in occupational safety, or to complete a research project-in-lieu-of-thesis. Non-thesis research projects for students supported by the training grant addressed in-plant applied research problems.

Five trainees were recruited into the program and supported with NIOSH funding. All have gone into industry or government safety, ergonomics, or human factors positions. Four completed all studies, earning Master of Science degrees. A fifth plans to complete and defend his thesis, thereby meeting all graduation requirements, by the end of the year.

Background

The training program was offered jointly by the Department of Industrial and Manufacturing Engineering (IME) and the Department of Public Health (PH). Following are overviews of the two departments and departmental programs relevant to the training program

Industrial and Manufacturing Engineering

Industrial engineering, as understood, practiced, and taught by Oregon State University (OSU) IME faculty, is the application of science, mathematics, and engineering methods to complex system integration and operation. Manufacturing engineering is a specialization of industrial engineering that focuses on the making of physical products. Because the systems with which they work are so large and complex, industrial and manufacturing engineers (IMEs) must develop expertise in a wide variety of disciplines, the ability to work well with people, and a broad, systems perspective. IMEs help integrate and operate systems in all sectors of industry and government including

- aerospace (e.g., NASA space shuttle pre-launch processing systems),
- automotive (e.g., automobile final assembly plants),
- communications (e.g., telephone services),
- computers (e.g., factory information systems),
- electronics/semiconductors (e.g., silicon wafer fabrication facilities),
- food (e.g., canneries and fast food restaurant chains),
- government (e.g., department of motor vehicles service centers),
- health care (e.g., hospital central stores and operating rooms),
- manufacturing (e.g., circuit board fabrication facilities),
- retail (e.g., product distribution centers), and

- transportation (e.g., airlines, overnight delivery services).

In their role as system integrators, IMEs analyze and design, for example,

- facilities (buildings, rooms, equipment, infrastructure, etc.),
- material handling systems,
- manufacturing and other production processes,
- information systems, and
- individual and group workplaces.
- In the realm of operations, although IMEs typically do not directly operate systems themselves, they develop, apply, and monitor policies, procedures, and algorithms for
- production planning and control,
- resource allocation and scheduling,
- personnel assignment and scheduling,
- quality assurance, and
- inventory control.

The OSU Industrial and Manufacturing Engineering Department offers two ABET-accredited undergraduate degrees, an Industrial Engineering degree and a Manufacturing Engineering degree, and Master of Science, Master of Engineering, and Doctor of Philosophy programs offering four concentration areas:

- Manufacturing Systems Engineering
- Information Systems Engineering
- Human Systems Engineering
- Multi-scale Fabrication

The Occupational Safety and Health Training Program (curriculum described below) was offered as a specialization in the Human Systems Engineering concentration area.

Public Health

Public Health is an exciting and diverse field for those interested in the health and well-being of populations and their environments. A variety of public health careers in the public and private sectors offer opportunities to work locally, regionally, nationally and internationally to promote health and prevent disease. Recognizing that multiple and complex factors affect the public's health, our faculty and students examine environmental issues, access to health care services, health policies, and social and contextual factors as determinants of health. We acknowledge that efforts to improve health must go beyond the treatment of disease and must address all conditions affecting the health of populations including human behavior, social conditions, health care, institutions, governmental and corporate policies, and environments.

The department offers undergraduate BS degrees in Health Management and Policy with an option in long-term care and Health Promotion and Health Behavior. MS degrees are offered in Public Health, Health Promotion and Health Behavior, and Environmental Health and Occupational Safety Management.

As part of the collaborative Oregon Master of Public Health (OMPH) Program, the department offers an MPH degree. The cooperative statewide MPH program is accredited by the Council on Education for Public Health and provides leadership in the field of education, research and service in all aspects of public health. OSU's MPH degree combines broad training in public health with specific training in four specialty tracks:

- Health Management Policy
- International Health
- Health Promotion and Education
- Environment Safety and Health

The OSU Department of Public Health is the only institution in the state of Oregon that offers a PhD in Public Health. The PhD program prepares students for careers in research, university teaching in graduate programs, policy analysis and development, and other high-level public health positions.

The Occupational Safety and Health Training Program (curriculum described below) was offered as a specialization in the Master of Science in Environmental Health and Occupational Safety Management Program.

Objectives

The objectives of this training program were to establish a coordinated graduate degree program in occupational safety and health within the IME and PH departments to produce exceptionally well-rounded graduates in safety and human factors/ergonomics. These graduates are particularly needed in the Pacific Northwest to support current efforts of state and local governments and regional industries to improve occupational safety and health. These objectives were met largely through NIOSH support of the program in that it has made it possible for us to attract and retain highly qualified trainees who otherwise might not have come to OSU at all or might have pursued other academic majors.

Faculty and Administration

The program consisted of two separately administered academic programs leading to a Master of Science (M.S.) degree in IME with an emphasis in human systems engineering, or to an M.S. degree in Environment, Safety and Health Sciences. Dr. Jeffrey C. Woldstad, the original program director, resigned his position at Oregon State University early in the grant. Dr. Kenneth H. Funk II, Associate Professor of Industrial and Manufacturing Engineering, and Dr. Anthony Veltri, Associate Professor of Environmental Health and Safety, replaced Dr. Woldstad as Program Co-Directors.

Faculty

Dr. Funk received the BA degree in biology from Taylor University in 1975 and the MS and PhD degrees in Industrial and Systems Engineering from The Ohio State University in 1977 and 1980, respectively. He is with the Industrial and Manufacturing Engineering Department, where he teaches courses in human factors engineering, industrial engineering, system safety, and artificial intelligence. His research interests include human factors engineering (especially in the areas of aviation and medicine), applied artificial intelligence, and philosophy of technology. He is a member of the Human Factors and Ergonomics Society and the Association of Aviation Psychologists.

Dr. Veltri has been an associate professor of Safety Studies (Environmental Health and Safety) at Oregon State University since 1985. He holds an MS in Safety Studies (1975) and an Ed.D. Management Specialization (1985) from West Virginia University. Dr. Veltri's research focus is in the management and financial aspects of the environmental, safety and health function within private and public sector firms. He has specifically focused on developing models/tools that assess risk and cost burden impact. He has obtained major funding from the high technology sector to model the cost impact of environment, safety and health issues and practices linked to semiconductor manufacturing technology and process designs over their productive/economic life cycle. He has presented his research internationally. His current research is in the areas of strategy assessment, building a business case for safety, health and

environmental issues and practices, and sustainable resource development and use. He is an active member of the National Safety Council, American Society of Safety Engineers and The National Safety Management Society. He has advised on safety, health and environmental issues and practices affecting the aerospace, high technology, energy, manufacturing utilities and manufacturing sectors. In addition, he has advised with the U.S. Department of Agriculture and the Environmental Protection Agency. He has also served as an expert in a variety of legal cases involving injury litigation.

Dr. Cathy Neumann is an Associate Professor in the Environmental Health and Safety Program in the Department of Public Health at Oregon State University. She currently teaches graduate and undergraduate courses in toxicology, risk assessment, occupational health, air quality, and environmental health policy and regulations. Dr. Neumann received her Ph.D. from the University of Michigan in Biochemical Toxicology in 1989 and was a Postdoctoral Fellow in Immunotoxicology at OSU from 1989-1991. Prior to joining the EH & S faculty at OSU, she served as the lead toxicologist for the Oregon Health Division (OHD). Her responsibilities at OHD included conducting human health risk assessments for a broad array of environmental contaminants and communicating any potential human health risks to the public, state and local health officials and the media. She has authored over 40 peer-reviewed publications including journal articles, book chapters, and scientific abstracts in the areas of toxicology and environmental health. Dr. Neumann currently holds memberships in the Society for Risk Analysis, Pacific NW Association of Toxicologists, and the National Environmental Health Association.

In addition to these three core faculty members, other faculty in the IME and Public Health Department have been involved in course instruction for the trainees enrolled in this program. Table 1 presents a summary of the faculty and their areas of expertise.

Ms Gibbons is President of Doyle & Gibbons, Inc., Applied Ergonomics and Safety management Services of Oregon. She is highly recognized and specialized in developing operational policy and procedures related to ergonomics in high technology industries. Ms. Gibbons has also presented research papers at various international and national conferences and is published in journals specifically focused on construction safety and ergonomic issues and practices.

TABLE 1. Summary of core faculty areas of expertise.

Faculty	Ergonomics (General)	Occupational Biomechanics	Human Factors	Safety	Industrial Hygiene	Toxicology	Environmental Health
K. Funk							
C. Neumann							
A. Veltri							
B. Gibbons (adjunct)							

Program Administration

As a small training program, it was administered informally, first by Dr. Woldstad, then by the two Co-directors. The Co-directors met or conferred by telephone or e-mail as needed to review budgets, discuss prospective trainees, review trainee progress, and prepare reports to NIOSH.

Since the program involved departments in separate OSU colleges, the program budget was split into two separate accounts, assigned to separate accounting technicians. The OSU Research Accounting Office worked with the two accounting technicians to prepare regular financial reports to NIOSH. For renewal applications, generally the Public Health accounting technician worked with the Co-directors to consolidate the proposal budgets.

Dr. Veltri acted as liason between the training program and industrial and government representatives to assure the relevance of the curriculum structure and content. Specifically, he has organized the successful OSU Environment, Safety and Health Corporate Partners Program in which private companies are invited to sponsor a special lecture series in which industry experts visit campus to talk to students about special issues in the field of Environment, Safety and Health. The lectures, which are held numerous times a year, typically cover topics such as:

- Environment, Safety and Health Management Information Systems
- ESH Cost Modeling
- Disaster Management and Homeland Security
- Corporate Sustainability
- Occupational Safety and Health
- Risk and Loss Control
- Solid and Hazardous Waste Management
- Eco/Human Toxicity
- Air-water Pollution
- Life Cycle Analysis
- ESH Supply Chain Management

Curricula

The program consisted of two curricula, Industrial Engineering (administered by the IME department) and Environmental Health and Occupational Safety (administered by the PH department). The following tables show the original curricula with changes necessitated by Dr. Woldstad's departure and the lack of an available instructor to cover all of his courses.

Industrial Engineering (Human Factors Engineering)

Graduates with master's degrees in Industrial and Manufacturing Engineering (emphasis in human factors engineering) were trained to be able to design, assess, and improve human-machine, human-human, human-organization systems

Original (53 quarter credit hours)	***Revised (53)***
Core (9)	**Core (9)**
IE 552 Design of Experiments (3)	IE 552 Design of Experiments (3)
IE 591 Industrial Statistics (3)	IE 591 Industrial Statistics (3)
IE 594 Research Methodology (3)	IE 594 Research Methodology (3)
Human Systems Engineering (17)	**Human Systems Engineering (17)**
IE 545 Human Factors Engineering (4)	IE 545 Human Factors Engineering (4)
IE 547 Occupational Biomechanics (3)	Two of the following three courses: IE 546 Human-Machine Systems Engineering (3) IE 548 Cognitive Engineering (3) BIOE 550 Biomechanics (3)
IE 549 Engineering Psychology (3)	
IE 570 Management Systems Engineering (4)	IE 570 Management Systems Engineering (4)
IE 593/H 594 Applied Ergonomics (3)	IE 593/H 594 Applied Ergonomics (3)
Occupational Safety (15)	
H 545 Occupational Safety	H 545 Occupational Safety
H 583 Safety/Environmental Management (3)	H 583 Safety/Environmental Management (3)
H 585 Safety, Health & Environmental Law (3)	H 585 Safety, Health & Environmental Law (3)

H 588 Occupational Safety (3)	H 588 Occupational Safety (3)
H 595 Design for Environment, Safety & Health (3)	H 595 Design for Environment, Safety & Health (3)
Electives (6) select 2 courses from the following	Electives (6) select 2 courses from the following
H 525 Principles & Practices of Epidemiology (3)	H 525 Principles & Practices of Epidemiology (3)
H 542 Environmental & Occupational Health (3)	H 542 Environmental & Occupational Health (3)
H 546 Industrial Hygiene Instrumentation (3)	H 546 Industrial Hygiene Instrumentation (3)
H 548 Public Health Toxicology (3)	H 548 Public Health Toxicology (3)
H 589 Emergency & Disaster Preparedness (3)	H 589 Emergency & Disaster Preparedness (3)
H 598 Fire Protection and Prevention (3)	H 598 Fire Protection and Prevention (3)
Research (6)	Research (6)
IE 506 Research Project	IE 506 Research Project

Environmental Health and Occupational Safety (Occupational Safety)

Graduates with master's degrees in **Environmental Health and Occupational Safety** were trained to be able to design, implement and evaluate occupational safety programs.

Original (51)	***Revised (53)***
Core (10)	**Core (10)**
H 515 Research Methodology (3)	H 515 Research Methodology (3)
H 524 Health Data Analysis (4)	H 524 Health Data Analysis (4)
H 525 Principles & Practices of Epidemiology (3)	H 525 Principles & Practices of Epidemiology (3)
Human Systems Engineering (17)	**Human Systems Engineering (17)**
IE 545 Human Factors Engineering (4)	IE 545 Human Factors Engineering (4)
IE 547 Occupational Biomechanics (3) IE 549 Engineering Psychology (3)	Two of the following three courses: IE 546 Human-Machine Systems Engineering (3) IE 548 Cognitive Engineering (3) BIOE 550 Biomechanics (3)
IE 570 Management Systems Engineering (4)	IE 570 Management Systems Engineering (4)
IE 593/H 594 Applied Ergonomics (3)	IE 593/H 594 Applied Ergonomics (3)
Occupational Safety (15)	**Occupational Safety (15)**
H 545 Occupational Safety	H 545 Occupational Safety
H 583 Safety/Environmental Management (3)	H 583 Safety/Environmental Management (3)
H 585 Safety, Health & Environmental Law (3)	H 585 Safety, Health & Environmental Law (3)
H 588 Occupational Safety (3)	H 588 Occupational Safety (3)
H 595 Design for Environment, Safety & Health (3)	H 595 Design for Environment, Safety & Health (3)
Electives (3) select 1 courses from the following	Electives (3) select 1 courses from the following
H 525 Principles & Practices of Epidemiology (3)	H 525 Principles & Practices of Epidemiology (3)
H 542 Environmental & Occupational Health (3)	H 542 Environmental & Occupational Health (3)
H 546 Industrial Hygiene Instrumentation (3)	H 546 Industrial Hygiene Instrumentation (3)
H 548 Public Health Toxicology (3)	H 548 Public Health Toxicology (3)
H 589 Emergency & Disaster Preparedness (3)	H 589 Emergency & Disaster Preparedness (3)
H 598 Fire Protection and Prevention (3)	H 598 Fire Protection and Prevention (3)
Research (6)	Research (6)
H 503 Thesis (6)	H 503 Thesis (6)
H 506 Project (6)	H 506 Project (6)

Recruiting

Several means were used to recruit qualified individuals to enroll in this training program, specifically, direct contact with students currently pursuing a M.S. graduate program in Industrial Engineering or Environment and Occupational Safety Management, advertisement of the program in professional journals and by professional societies in their periodical bulletins, use of specially designed fliers describing the training program mailed to major universities and organizations in the Pacific Nothwest, personal contact at the annual conferences and by telephone by our faculty with their counterparts at other schools, and advertisement in departmental web –sites.

Trainees

The training grant program was primarily designed for individuals with undergraduate degrees in science and engineering, but was flexible enough to accommodate students with degrees in other areas. Students enrolling in the IE graduate program were expected to have some background in: a) probability and statistics; b) linear algebra; c) computer programming; and d) engineering economics. Students enrolling in the Public Health program were expected to have some background in: a) introduction to public health; b) introduction to human disease; and c) introduction to epidemiology/ biostatistics. Incoming students to either program without adequate background in these areas were required to do some leveling coursework during their first few terms at OSU. Students enrolling in the program were required to meet the admissions requirements of the OSU Graduate School (grade point average GPA of 3.0 on a 4.0 scale for the last 90 quarter credit hours of graded course work) and either the admissions requirements of the IME Department (TOEFL 550, GRE-Quantitative 680, GRE-Analytical 580) or the Public Health Department (TOEFL 550, GRE-Verbal 500, GRE-Quantitative 500, GRE-Analytical 500). Students were selected by the program co-directors based on past academic performance as demonstrated by GPA, standardized test scores, and letters of recommendation.

Five trainees were recruited into the program, three into the Public Health portion, two into Industrial Engineering. Four of the trainees completed their degrees and are now working in industry. The fifth took a job with the US Navy, but plans to defend his thesis in fall term 2006. The impacts of these trainees is described below.

Outcomes/Impact

The graduates of our program, years of graduation, and present positions, are as follows:

- Anthony Brace, 2004, Ergonomic Specialist, Intel Corporation, Hillsboro, Oregon
- Levi Herman, 2006, Occupational Safety and Health manager and Ergonomic Specialists, Hynix Semiconductor, Eugene, Oregon
- Jeffrey Stebel, 2005, Industrial Engineer, Occupational Safety and Health Specialist, Lockheed-Martin, Los Angeles, California
- Trisha Wade, 2003, Ergonomic Specialists/Injury Prevention, Central Washington, University, Ellensburg, Washington

A fifth trainee completed all coursework then took a position with the US Navy. He plans to complete and defend his thesis by 31 December 2006:

- Charles Weaver, 2006 (expected), Industrial Engineer/Human Factors Engineer, Naval Surface Warfare Center, Panama City, Florida.

All graduates of the program are theoretically grounded and technically skilled professionals that are capable of confronting and managing environment, safety and health issues and practices in the organizations that they are employed. They either direct and/or assist in the design and implementation of strategies, while applying evidence-based scientific knowledge in environment, safety and health issues. They understand the interrelationship among environment, safety and health practices and other organizational activities. They all assess scientific epidemiologic and statistical data, analyzing ESH issues, policies and regulations and recommending strategies for preventing and controlling environment, safety and health hazards. They communicate environment, health and safety principles and concepts through various strategies across multiple sectors of the organizations that they serve and employ ethical principles and behaviors to environment, safety and health issues.

Recommendations

Although this grant has ended, our instructional programs continue, students may still pursue these curricula, and we will continue to support that instruction with available state funding. However, available funding is not sufficient to meet the needs of the region for occupational safety and health professionals. Support by NIOSH through its training grant program will be critical to our efforts to continue the success of this program. It would provide us with both the financial resources and sense of legitimacy needed to place competent and capable students in the workforce in the Pacific Nothwest. At present, educational opportunities in the Pacific Northwest for students in occupational safety and ergonomics are very limited, especially within engineering programs. The regional ERC program at the University of Washington supports a curriculum in occupational safety and health, but this program is not associated with engineering. Oregon State University houses the larger of two state supported engineering programs in Oregon. Our program is the only one that at present teaches and conducts research in the area of occupational safety and health. Demand for graduates with specialized training in this area is high in the region and is continuing to grow. We have applied for a second training grant and the proposed program would fulfill an acute regional need for professionals in occupational safety and health and would draw students from the Pacific Northwest geographic area to prepare for and fill critical occupational safety and health roles in this region.

Publications

Trainee Publications

Master of Science requirements at Oregon State University include either an MS thesis, or a substantial research report in lieu of thesis. Following are the theses and reports of trainees

Masters Theses

Stebel, J.M. (2005) *Determining the Validity of the Task Management Environment to Predict Pilot Concurrent Task Management Performance*, MS Thesis, Corvallis, Oregon: Oregon State University.

Weaver, C. (in preparation) *The Contribution of Hand Loads to Cervical Disk Compression, Using Isometric Calibration*, MS Thesis, Corvallis, Oregon: Oregon State University.

Research-In-Lieu-of-Thesis Reports

Brace, A. (2004). *Linking Operational Efficiency and Ergonomic Design to Make a Business Case for Ergonomic Change; A Case Study*, Corvallis, Oregon: Oregon State University Department of Public Health.

Herman, L. (2006). *A Process Safety Management Hazard Analysis: Trimethyl Aluminum-.*, Corvallis, Oregon: Oregon State University Department of Public Health.

Wade, T. (2003). *Athletic-Training Bloodborne-Pathogens Exposure*, Corvallis, Oregon: Oregon State University Department of Public Health.

Related Publications

The following related publications are by other students in the courses that were partly supported by this program or by program faculty.

Disserations

Michael Behm, 2004, Establishing the Link Between Construction Fatalities and Disabling Injuries in Design for Construction Safety

Sathy Rajendron, 2007, Sustainable Construction Safety and Health Model

Theses and Research-In-Lieu-of-Thesis Reports

Deb-Fel Carlson, 2005, Health Care Industry, Safe Patient Handling Procedures

Ellen Ridgeway, 2006, Occupational Noise Exposure and Hearing Loss in Casting Foundaries

Matt Hart, 2005, Hand Injuries in Oregon Foundaries

Elizabeth Maxwell, 06, Lead Exposure in Hispanics Children Due to Ingestion of Candy Imported from Mexico

Judy Younce, 06

Journal/Proceedings Papers

Publications (past 3 years)

Behm, M., Veltri, A., and Kleinsorge, Ilene, (2004) "Building the Business Case for Safety: A Cost Analysis Model," Professional Safety, Des Plaines, Illinois. Volume 49, Number 4: 22-29.

Nave, M., and Veltri, A., (2004) "Effect of Loss Control Services on Reported Injury Incidents," Journal of Safety Research, Chicago, Illinois. Chicago, IL, 35: 39-46

Veltri, A., Dance, D., and Nave, M., (2003) "Safety, Health and Environmental Cost Model: An Internal Study from the Semiconductor Manufacturing Industry," Part 1. Professional Safety, Des Plaines, Illinois. Volume 48, No 7: 30-36.

Veltri, A., Dance, D., and Nave, M., (2003) "Safety, Health and Environmental Cost Model: An Internal Study from the Semiconductor Manufacturing Industry," Part 2. Professional Safety, Des Plaines, Illinois. Volume 48, No 6: 23-32.

Manuscripts in Review

Veltri, A., Behm, M, Pagell, M., and Amos, A., (2006) "Assessing the Relationship Between Safety and Quality," Safety Science,

Veltri, A., and Ramsay, J, (2006) "Economic Analysis of Environment, Safety and Health Investments,

Veltri, A., Behm, M., Pagell, M, and Dibrell (2006) "A Framework for Assessing Environment, Safety and Health Strategy and It's Link to Competitive Performance

Papers

Veltri, A., (2005) "Making the Business Case for Environment, Safety and Health" Oregon Governors Occupational Safety and Health Conference, Portland, Oregon

Veltri, A., (2004) "From Classroom To Board Room: Are Students Prepared"? American Society of Safety Engineers, Annual Conference, Chicago, Illinois.

Appendix

The following tables summarize training program trainee statistics.

Academic Training Report

Degree Awarded	How Does Degree Read?	# Full-Time Trainees Enrolled[1]	# Full-Time NIOSH-Supported Trainees	# Part-Time Trainees Enrolled	# Part-Time NIOSH-Supported Trainees	# Other Trainees Taking OS&H Courses[2]	# Trainees Graduated
Baccalaureate/associate degree							
Master's degree							
MS	Master of Science, Environmental Health and Safety	10	1	5	0	24	3
MS	Master of Science, Industrial Engineering, Human Systems Engineering Concentration	5	1	0	0	7	1
Doctorate degree							
PhD	Doctor of Philosophy, Public Health	4	0	0	0	4	0
PhD	Doctor of Philosophy, Industrial Engineering, Human Systems Engineering Concentration	2	0	0	0	2	0
Post-doctoral (Include formally registered Occupational Medicine residents in all years of the residency.)							
Other (specify, e.g., undergraduate Certificate program trainees)							

Trainee Summary Data

Level	# Applicants Applied	# Applicants Offered Admission	# Trainees Entering Training[2]	# Trainees Who Left Program	# Trainees Currently in Training	# Trainees Completed Training	# Post Doc MDs	# Post Doc PhD
Masters	5	5	5	1	0	4	0	0

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Centers for Disease Control
and Prevention (CDC)

Memorandum

Date December 22, 2006

From Principal Engineer, OEP, NIOSH

Subject Final Progress Report for entry into NIOSHTIC2/NTIS for NIOSH Training Grant No. T01 OH 008407

To Vern P. Anderson, Chief, IRB, EID (C-18)

The enclosed report has been received from the Program Director to document work performed during the specified grant project period. The following information applies to the designated Training Project Grant (TPG):

Title: Occupational Safety and Health Training Program

Project Director: Kenneth H. Funk II, Ph.D.
Department of Industrial and Manufacturing Engineering
Oregon State University
Corvallis, OR 97331

Grant No.: T01 OH 008407

Project Period: 7/1/2002 - 6/30/2006

Please place the report in DIDS and I also recommend it for entry into NIOSHTIC2 and submission to NTIS.

Thanks for your assistance.

John Talty

John T. Talty, P.E., DEE

Enclosure