

The Future of “Industrial” Hygiene

Franklin E. Mirer, PhD, CIH
Professor

Environmental and Occupational Health
Hunter College Urban Public Health Program
CUNY





***Speak for
those who
have no
voice!***

5,702 killed by job injuries in 2005 | 50,000 workers die each year from occupational diseases | Hispanic worker job deaths at all-time high | Coal mine deaths doubled in 2006 | 9 million health care workers face pandemic flu threat | 8.5 million public employees have no OSHA protection



GOOD JOBS | SAFE JOBS

WORKERS MEMORIAL DAY • APRIL 28

IT'S TIME

AFL-CIO

Is Our Project “Over”?

- **New start in 1970 with OSHA law**
- **Compliance with 1968 Chemical TLV's**
- **90 dBA noise standard**
- **Respirator standard – selection and fit**
- **16 6(b) PEL's and comprehensive rules**
- **Haz Com**
- **HAZWOPER**
- **2007: Can we survive with bad PEL's ?**



Improve Protections or Die Trying!

- Apply the OSHA standards we have
- Extend attention to acknowledged high risk activities outside Mfg
- Bring exposure limits into the 21st century
- Biological materials
- Ergonomics
- Work related stress factors
- Crossover to environment
- *Speak for those who have no voice!*



The discipline formerly known as industrial hygiene:

- Measure exposure (quantitative or semi-quantitative)
- Associate exposure with adverse effect
- Determine a limit or a level of concern
- Reduce exposure below limit
- Continuous improvement



Why the Occupational Environment is part of the Environment:

- ~ 50% population economically active at any time
- ? % population economically active at some time
- ~ 40% of waking hours at work
- Highest metabolic rate: 36% of air we breathe (24/7/365) is at work
- Highest cognitive energy
- Take home exposures and effects
- **“I”H must recognize the non-work 60%**



“Narcissistic” Injury:

- **Work can be central to a person’s image of self**
- **Disabling injury or illness damages more than the body part, it damages the entire psychic construct**
- **Physical injury damages mental health**
- **Gravity of damage preventing someone from working is less than general view of “disability.” Therefore most victims unprotected by ADA.**
- **Whether work environment caused injury, or rigor of work environment prevents return to work from injury, the injury to image of self is the same.**

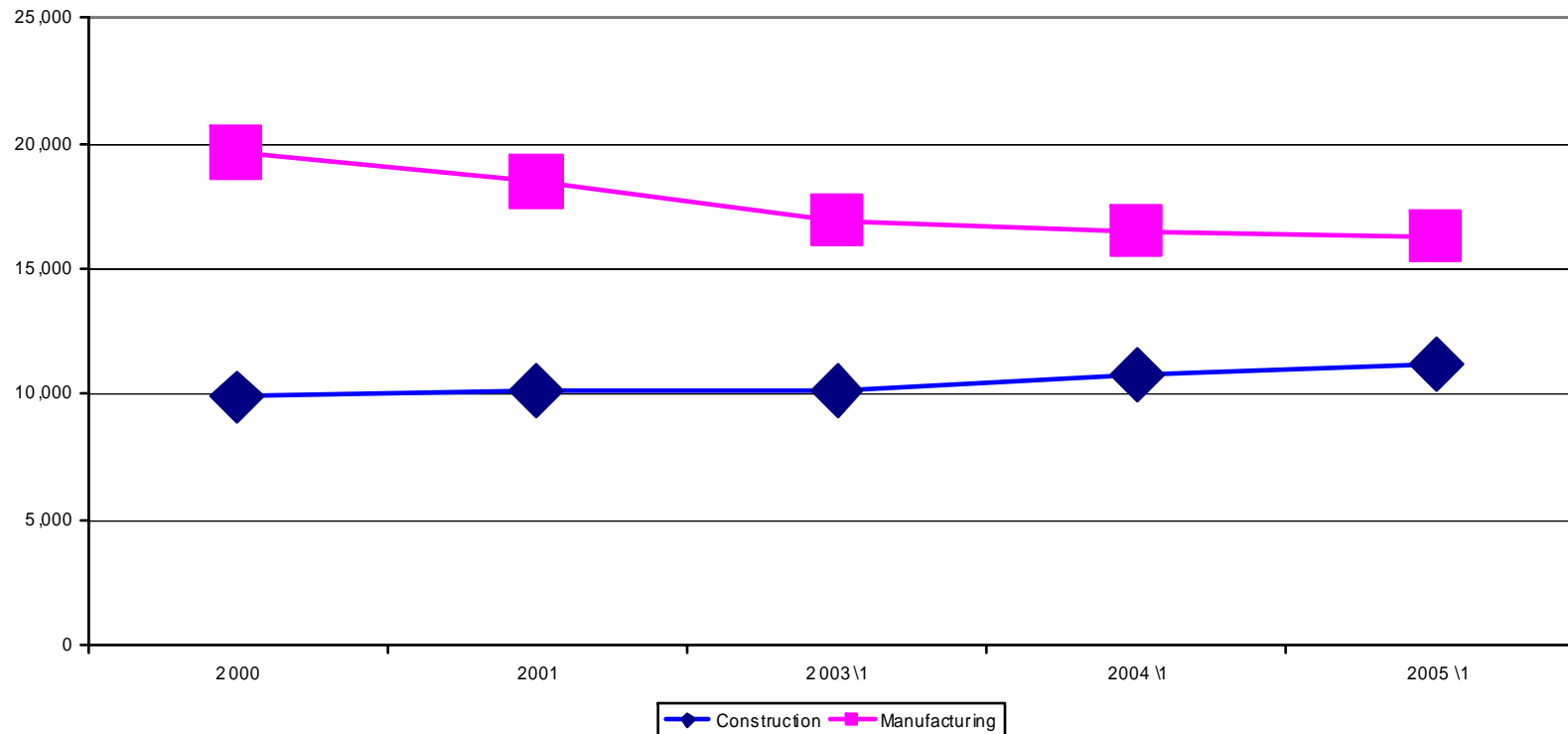


What Jobs Are Here To Stay?

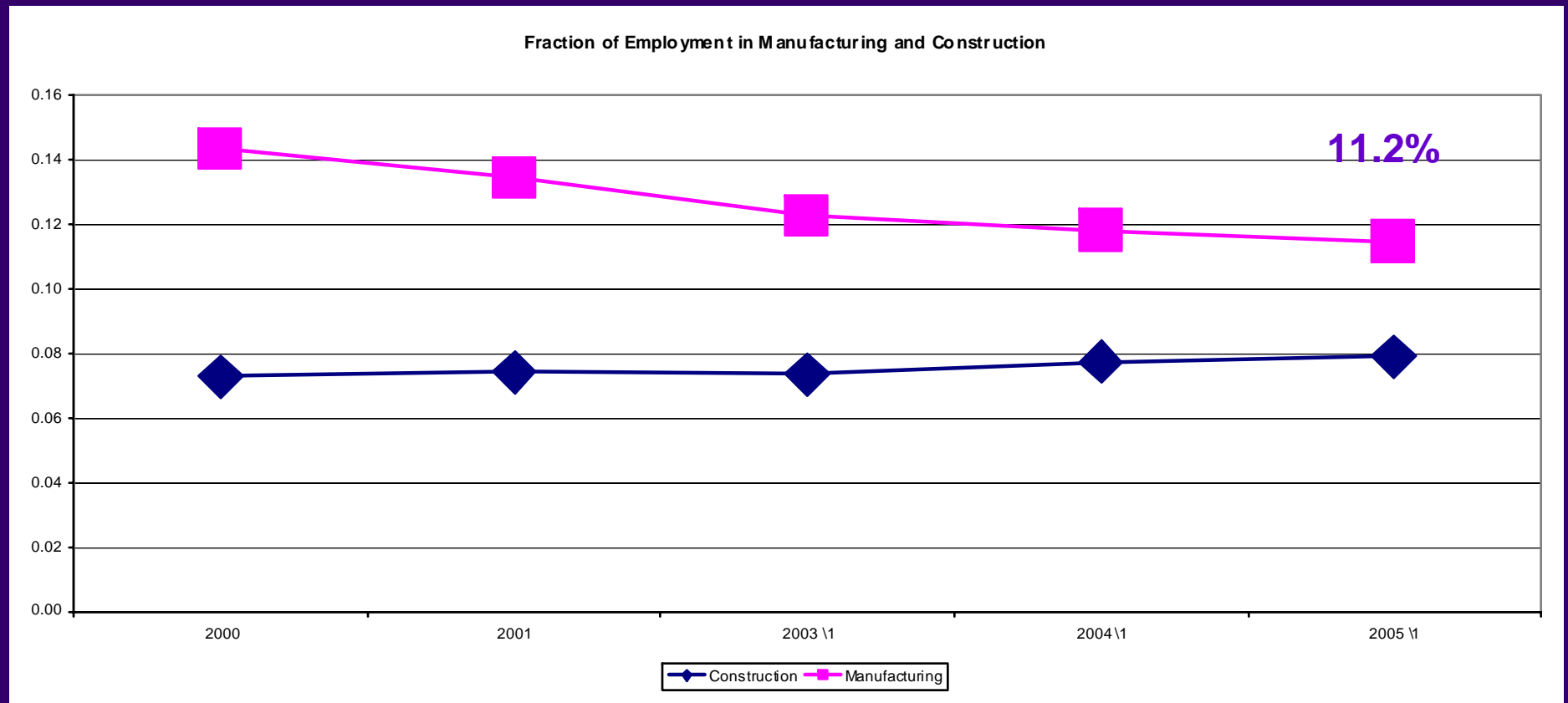


Trend in Employment in Manufacturing and Construction: 2000-2005

Employment by Year



Fraction of Employment in Manufacturing and Construction

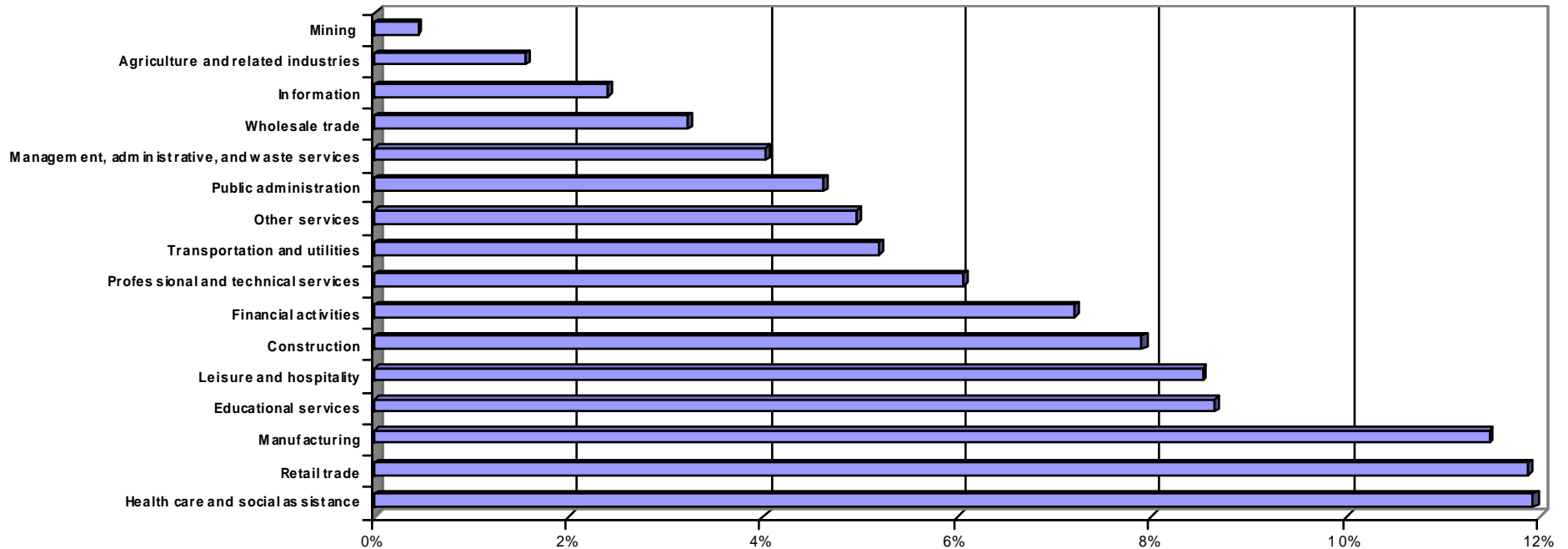


Factories may be going but not all gone:

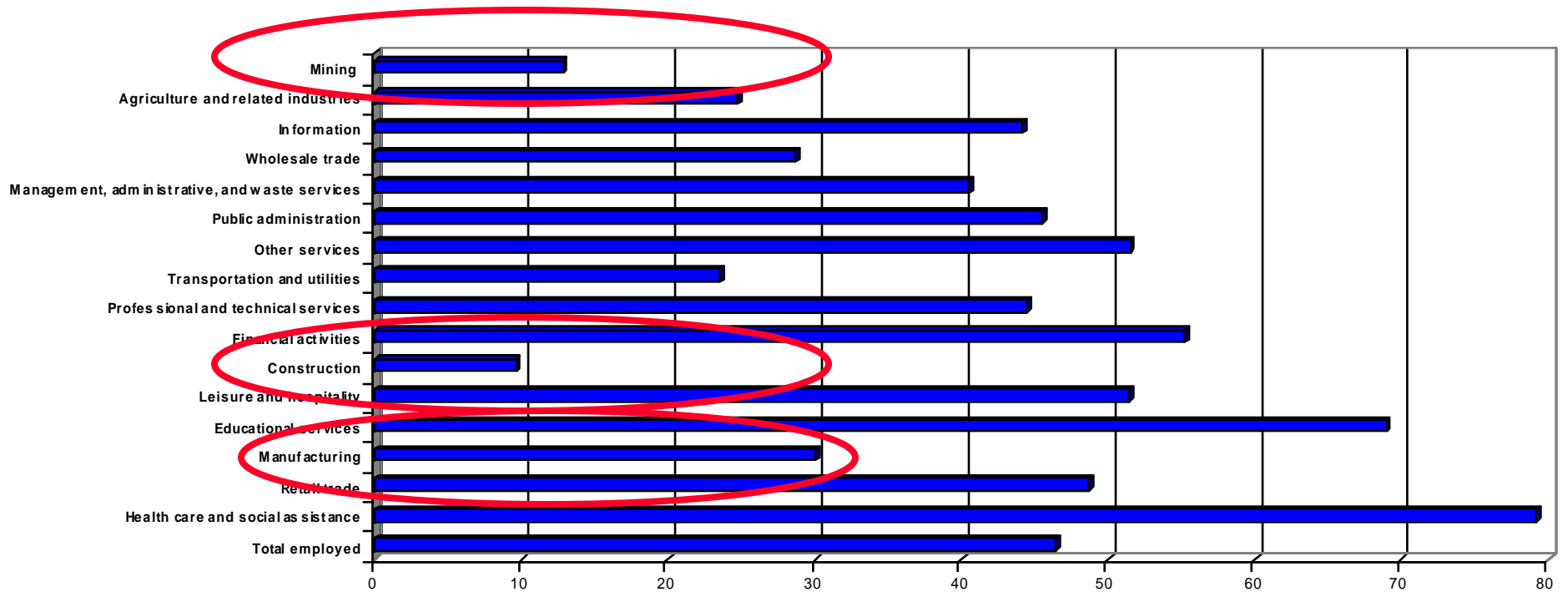
- **Smaller**
- **Inside contractors**
- **Not as pale**
- **Not as male**
- **Some sectors may stay –
guns and butter**



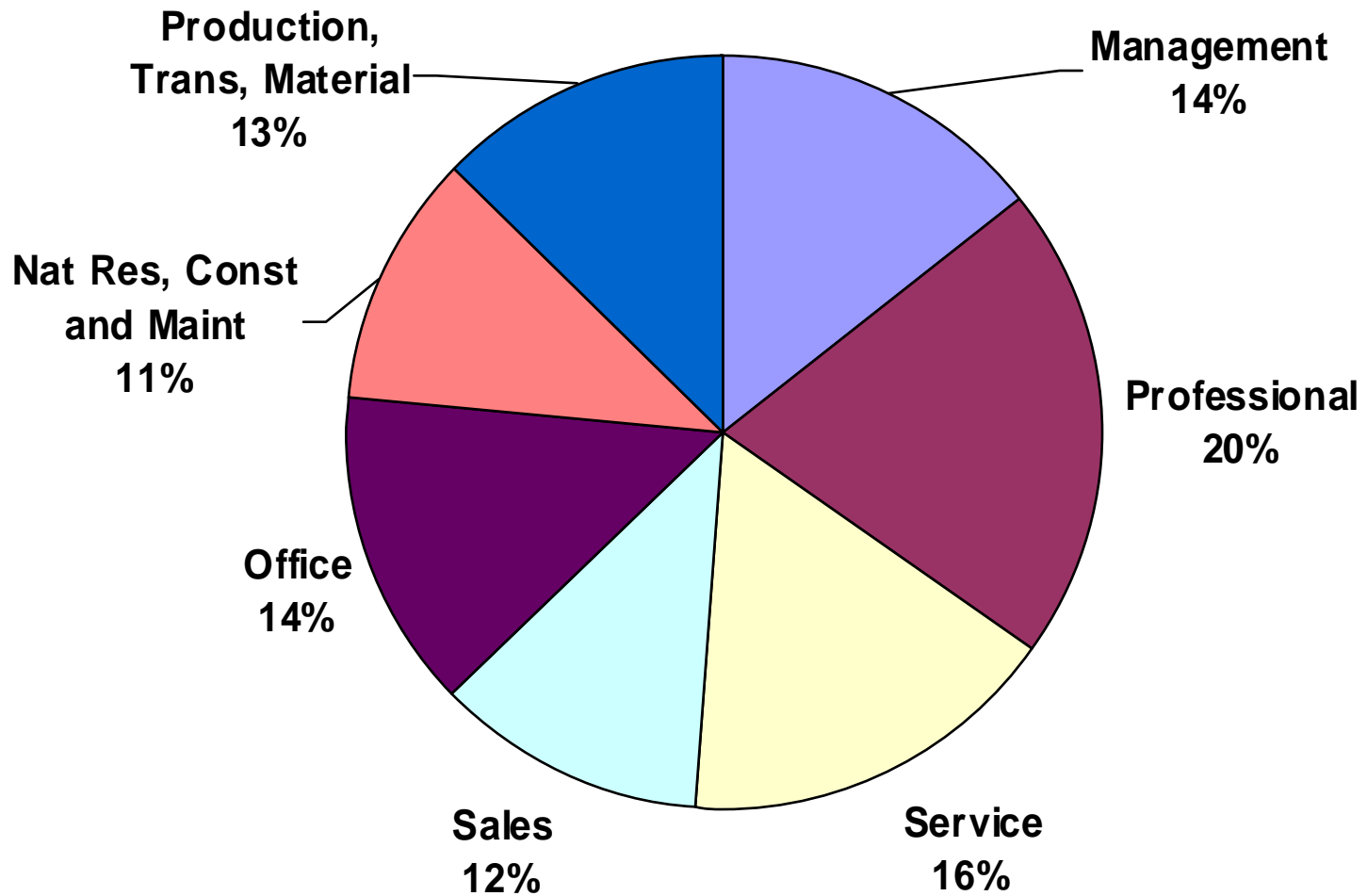
Fraction of Employment by Sector



Fraction Female by Industry



Employment by Job Classification, 2005



Fraction of Job Family Which is Female

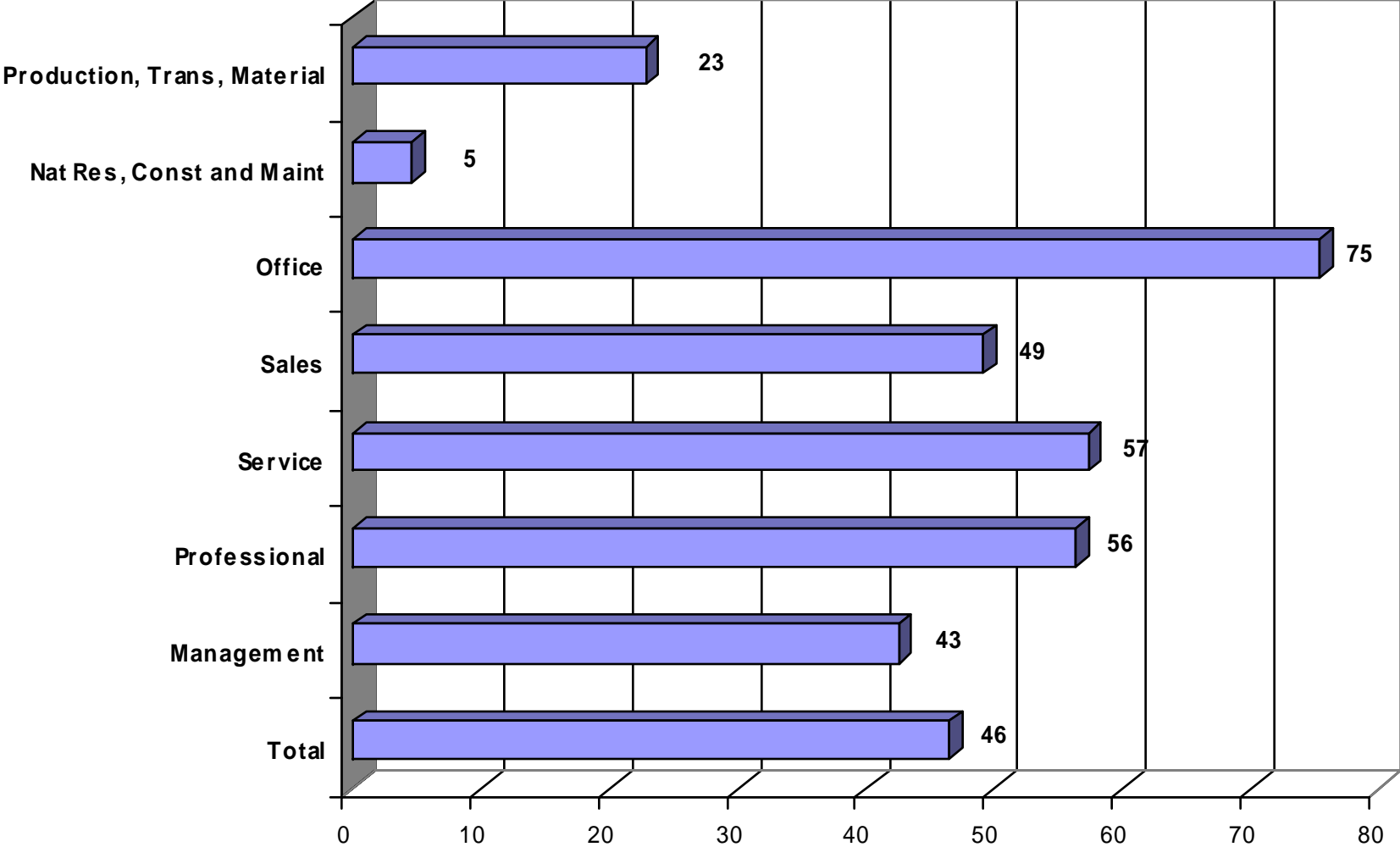


Table 1: Relative Risk of Disabling Injury by Occupational Group, United States, 2005

Occupational Group	Occupational Code	Percent of Workforce	Relative Risk
Management, business, and financial operations	11-13	14.4	1.0
Professional and related	15-29	20.3	2.1
Sales and related occupations	41	11.6	3.5
Office and administrative support	43	13.8	3.4
Service	31-39	16.3	7.8
Farming, fishing, and forestry	45	0.7	11.4
Construction and extraction	47	6.5	12.0
Installation, maintenance, and repair	49	3.7	14.9
Production	51	3.7	13.5
Transportation and material moving	53	6.1	21.3

Note: Number of cases with days away from work by occupational grouping from BLS Disabling Injury Survey, <http://www.bls.gov/iif/oshwc/osh/case/ostb1661.txt>. Employment by occupational grouping from Labor Department Current Population survey.



Enforcing What We've Got

**By not enforcing,
government tells workers
and employers that the
law doesn't matter.**



OSHA Citations: 1910.1000 2006-2007

#Cited	#Insp	\$Penalty	Industry Classification
224	105	257781	Manufacturing
17	10	9950	Services
7	3	21350	Transportation, Communications, Electric, Gas, And Sanitary Services
6	4	4950	Construction
5	3	5500	Agriculture, Forestry, And Fishing
5	4	2550	Retail Trade
4	2	1875	Wholesale Trade
2	1	630	Mining



OSHA Citations 1010.1001 2006-7

#Cited	#Insp	\$Penalty	Industry Classification
38	23	93025	Services
23	9	8280	Manufacturing
19	8	99683	Transportation, Communications, Electric, Gas, And Sanitary Services
10	5	13925	Finance, Insurance, And Real Estate
10	5	563	Public Administration
8	4	3200	Construction
4	3	0	Retail Trade
2	2	682	Wholesale Trade
1	1	0	Agriculture, Forestry, And Fishing



OSHA Citations: 1910.1025 2006-7

#Cited	#Insp	\$Penalty	Industry Classification
186	69	200853	Manufacturing
34	12	30295	Services
24	12	10705	Transportation, Communications, Electric, Gas, And Sanitary Services
21	11	0	Public Administration
20	12	9413	Wholesale Trade
2	1	450	Construction
2	1	0	Retail Trade
2	1	0	Finance, Insurance, And Real Estate



Improve Protection or Die Trying! (Short Term)

- **Resume identifying violations of the OSHA exposure and health standards we have now**
- **Resume enforcement of those standards**
- **Extend attention to known high risk sectors and activity:**
 - **Construction (including public sector embedded construction activities)**
 - **Health care**
 - **Agriculture**
 - **Embedded manufacturing in other sector employment**



Improve Protection or Die Trying! (Mid Term)

- Bring exposure limits into the 21st Century using the information we have now
- Reconcile particle exposure limits with accepted knowledge of particle toxicity from general population studies
- EPA limit of 15 $\mu\text{g}/\text{M}^3$ allows increased mortality and hospital admissions – what's the occupational equivalent?
- Particle inhalation causes cardiac mortality (American Heart Association consensus statement) – totally and completely ignored in occupational settings
- TLV's that make a difference: (for example, TLV for silica is 25 $\mu\text{g}/\text{M}^3$ vs. 100 $\mu\text{g}/\text{M}^3$ PEL)



Improve Protection or Die Trying! (Long Term)

- **Biological materials**
 - Microbial products
 - Infectious aerosols
 - Bloodborne and surface borne pathogens
 - Food derived materials
- **Ergonomics**
- **Defined work organizational risk factors**
 - Extended duty
 - Work schedule
- **Work related psychosocial stress**



The other 65% - Environment

- Hazardous waste manifests
- Air permits
- Water permits
- Local lead paint rules
- Local asbestos rules
- Toxic Substance Control Act
- Infection control
- Lab and Hospital Radiation





*Speak for
those who
have no
voice!*

5,702 killed by job injuries in 2005 | 50,000 workers die each year from occupational diseases | Hispanic worker job deaths at all-time high | Coal mine deaths doubled in 2006 | 9 million health care workers face pandemic flu threat | 8.5 million public employees have no OSHA protection



GOOD JOBS | SAFE JOBS

WORKERS MEMORIAL DAY • APRIL 28

IT'S TIME

AFL-CIO