

Safety & the **Diverse** Workforce

Lessons From NIOSH's Work With Latino Immigrants

By Michael A. Flynn

The U.S. workforce is undergoing dramatic demographic shifts that are likely to continue in the coming decades. Increasing participation of men and women in previously gender-segregated fields (Sarkar, 2002), the aging workforce (National Research Council, 2012) and the integration of 2.4 million soldiers who have served in Iraq and Afghanistan since 2011 (Waterstone, 2010) are just a few characteristics of the emerging diverse workplace.

Perhaps most noticeable is the country's growing ethnic diversity as a result of immigration and higher birthrates; this trend has prompted estimates that no ethnic or racial majority will exist in the U.S. by 2042 (Johnson & Lichter, 2010). Each group brings unique experiences, assets and challenges to the workplace in general and occupational safety and health in particular. Effectively responding to this diversity will be increasingly important for public- and private-sector institutions alike.

Immigrants & the Workforce

Immigration is a key contributor to these demographic shifts. The Pew Research Center's Hispanic Trends Project (formerly the Pew Hispanic Center) estimates that immigrants will

make up roughly 23% of adults of working age in 2050, up from 15% in 2005 (Passel & Cohn, 2008). It is also predicted that immigrants and their children, from all regions of the globe, will make up 83% of the growth in the working age population of the U.S. during this same time period (Congressional Budget Office, 2005). Immigration from Latin America to the U.S. has grown dramatically over the past 2 decades and will figure prominently in these numbers. Currently, about 18 million Latino immigrants live in the U.S. (Batalova & Terrazas, 2010).

This growth has been accompanied by geographic expansion into nontraditional settlement areas such as the Midwest and Southeast regions of the U.S. as immigration patterns responded to job opportunities (Gouveia & Saenz, 2000; Pew Research Center, 2005). This rapid and unanticipated growth in both traditional settlement areas and areas without bilingual infrastructure or a history of a Latino community present unique challenges and opportunities for immigrants, employers, safety professionals and institutions charged with promoting occupational safety and health (OSH).

Occupational Health Disparities

The growth and expansion of the Latino immigrant population has been accompanied by increased occupational health disparities for Latino immigrant workers. These workers suffer significantly higher rates of workplace mortalities (5.0 per 100,000) than all workers (4.0), non-Latino white workers (4.0) or non-Latino black workers (3.7) (Cierpich, Styles, Harrison, et al., 2008) (Figure 1, p. 54).

Considered alone, Latino immigrants to the U.S. have a workplace fatality rate of 5.9 per 100,000

IN BRIEF

- Companies must face certain challenges in integrating employees from an increasingly diverse workforce to remain effective, competitive and safe.
- These challenges include knowledge, language, culture and structural realities such as unfamiliarity with materials, institutional culture and wrong-sized PPE.
- While focused on Latino immigrants to the U.S., the approaches discussed can inform efforts with workers from various backgrounds.

Michael A. Flynn, M.A., is a social scientist with NIOSH's Training Research and Evaluation Branch in Cincinnati, OH, where he is project officer for a research program focused on better understanding and improving the occupational health of immigrant workers. Flynn is also assistant coordinator for NIOSH's Priority Populations and Health Disparities Program. Before joining NIOSH, he worked for nongovernmental organizations in Guatemala, Mexico and the U.S. Flynn holds a graduate degree in anthropology from University of Cincinnati and is a Research Fellow of the Consortium for Multicultural Psychology Research at Michigan State University.





person-years, which is almost 50% higher than the rate for all workers (4.0) and even greater when compared to Latino workers born in the U.S. (3.5) (Figure 2, p. 55). During the same period, two-thirds of work-related deaths among Latinos were among foreign-born individuals, up from just more than half in 1992. These data suggest that immigrant workers may be the driving force behind the elevated rates of workplace injuries and illnesses among Latinos in the U.S.

The direct and indirect cost of occupational injury and illness in the U.S. increased from \$146 billion (or \$217 billion in inflation-adjusted dollars) in 1992 to \$250 billion in 2007 (Leigh, 2011). This economic burden is similar to that of cancer and greater than that of diabetes, coronary heart disease or stroke. During 2007, workers' compensation benefits covered less than 25% (\$55 billion) of these costs, leaving injured workers and society as a whole to absorb these additional costs (Leigh, 2011). If OSH disparities are not reduced or eliminated for Latino immigrant workers, the cost to society will increase as their participation in the workforce grows over time.

To remain effective, competitive and safe, organizations must ensure that they have the internal

capacity to successfully integrate employees from an increasingly diverse workforce. This article discusses the immigrant work experience based on recent NIOSH research with Latino immigrant workers across the U.S. It identifies challenges that OSH professionals and organizations face as they work to promote OSH among immigrant workers as well as some general strategies for solutions. While the primary focus is the Latino immigrant workforce, the general themes and approaches are broad enough to inform efforts with other workforce groups as well.

Promoting Occupational Health Among Immigrant Workers

An essential first step in improving OSH among any group of workers is to understand the factors that contribute to their injuries. The noted demographic changes will not only require workers to integrate and adapt to the worksite, but will also require institutions to adapt and change. Therefore, it is important to focus on the diverse perspectives, backgrounds and experiences of all workers as well as those of the organization (Koonce, 2001).

Knowledge as a Barrier to Safety

Understanding how to work safely is crucial in avoiding occupational injuries and illnesses. Upon arrival to the U.S., immigrant workers often take jobs in industries in which they did not work previously (Eggerth, DeLaney, Flynn, et al., 2012). They are often unfamiliar with the machines, chemicals and materials present nor the hazards associated with them. Even immigrants who worked in the same industry often find different materials and procedures in the U.S.

For example, residential home construction in Mexico often relies on cinder blocks and cement, whereas materials such as wood and drywall are more common in many areas of the U.S. Finally, the regulatory structure and veracity of regulation enforcement in the U.S. may differ greatly from that of their home country (Flynn, Check, Eggerth, et al., 2013).

Therefore, even if workers are aware of the safety regulations governing their work, they may not know how to address an unsafe situation.

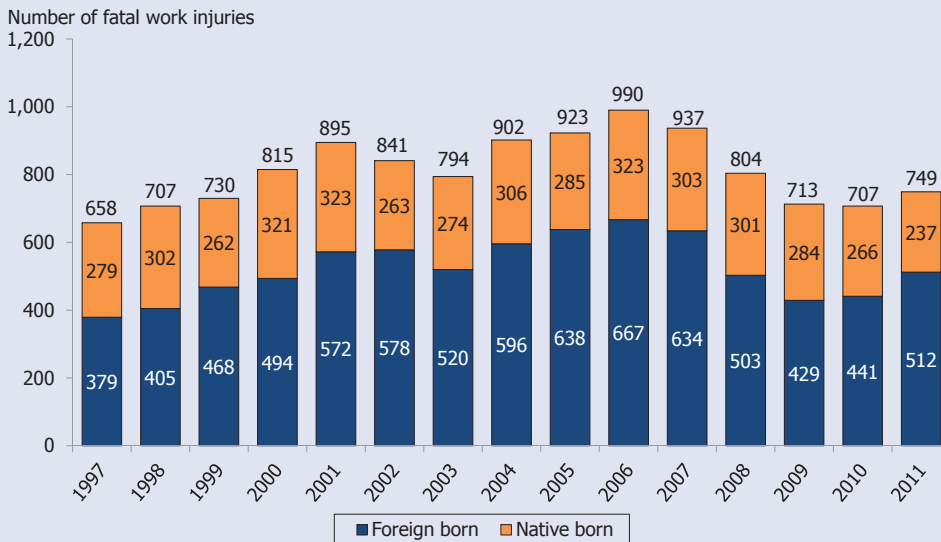
As a result, providing effective safety training is an essential practice. However, concerns have been raised about the quality of training that immigrant workers receive. Brown (2003) found that many Spanish-language safety materials were of poor quality. In addition, immigrant workers frequently report not receiving any safety training on the job in the U.S. (Gany, Dobslaw, Ramirez, et al., 2011; O'Connor, Loomis, Runyan, et al., 2005).

Therefore, determining effective ways to provide safety training to immigrant workers is an essential step in combating occupational health disparities (O'Connor, Flynn, Weinstock, et al., 2011). Such efforts must go beyond simple translations of existing English-language materials, and the format, content and messages should be customized for the target audience as well (Brunette, 2005). O'Connor, et al. (2005), provide a general overview

To remain effective, competitive and safe, organizations must ensure that they have the internal capacity to successfully integrate employees from an increasingly diverse workforce.

Figure 1

Number of Fatal Work Injuries for Latinos, 1997-2011



Fatal work injuries involving Hispanic or Latino workers increased in 2011 after four consecutive years of decline. Sixty-eight percent of fatally-injured Hispanic or Latino workers in 2011 were born outside of the United States.

Note. Data from 2001 exclude fatal work injuries resulting from the Sept. 11 terrorist attacks. Reprinted from "Census of Fatal Occupational Injuries Charts, 1992-2012 (revised data)," by Bureau of Labor Statistics, U.S. Department of Labor, 2013, p. 11.

of tailoring safety training along with an overview to approaches, techniques and best practices from the training literature.

Language as a Barrier to Safety

Language differences between immigrant workers and their supervisors and coworkers are one of the most frequently cited challenges companies face in promoting safety among immigrant workers (Gany, et al., 2011). This is particularly common in areas of the U.S. that have little to no bilingual infrastructure (Gouveia & Saenz, 2000; Pew Hispanic Center, 2005).

A common practice in companies with no bilingual staff is for the manager to identify the best English speaker among the immigrant workers and have him/her translate for the other workers. This can lead to miscommunication if the employee is not as competent in English as the supervisor believes. Additionally, it puts this employee in a position to mediate the relationship between the supervisor and the other workers, which could be exploited for personal gain by communicating one thing to the manager and another to coworkers (O'Connor, et al., 2011).

Developing a bilingual capacity within an organization, either through training or hiring, will become increasingly important in economic sectors with high immigrant participation such as the construction and service sectors. One way to address this is for companies to provide English classes to immigrant workers. While this is a laudable effort, anecdotal evidence suggests that U.S.-born workers may perceive this as immigrants receiving special treatment.

An alternate model is to provide both English and Spanish classes so that all workers have the opportunity to improve their communication skills and even their economic situation if proficiency with a second language is rewarded by a salary increase or a promotion. The shared struggle of learning another language may also help break down barriers within the workforce as coworkers, both immigrant and U.S.-born, see each other tackle the challenges of learning another language. Indeed, classes could be structured in such a way that students could practice with each other, which could also foster increased contact between workers of different backgrounds.

Workers' Culture as a Barrier to Safety

While the ability to communicate is essential, fixation on language can cause other

important cultural differences to be overshadowed. In the context of OSH and immigration, *culture* can be generally understood as a system of shared beliefs and behaviors, either brought from home or that develop after arrival that impact how groups of workers perceive, understand, adapt to and address work-related safety concerns.

Cultural factors that may affect safety at work include how immigrants understand work and their relationship to their coworkers and employers; how these understandings compare to their native-country experiences; how they perceive the dangers at work relative to other risks they face each day; how they adapt to workplace dangers; and how these understandings are similar and different from other groups of workers.

A study of a small group of Latino immigrant workers in Chicago, IL, documents how these workers' behaviors reflect a culture that placed a high value on hard work and being perceived as such by their employer (Gomberg-Munoz, 2010). These workers were observed making overt demonstrations of their productivity to curry favor with employers and cultivate a reputation as better employees, which led to a competitive edge in the labor market relative to U.S.-born workers. This study also describes the various tactics the group used to ensure that team members maintained a high productivity level. While this strategy may prove effective in securing employment, it can lead to an increased risk of injury over time.

Employers seeking to create a safe work environment must recognize these evolving value systems and adaptations so they can be addressed during training or in one-on-one interactions. A common

mistake made by U.S.-born managers is to overlook the significant diversity that exists in the Latino immigrant community (Eggerth & Flynn, 2010). Differences such as one's country of origin, ethnicity or race, primary language (Spanish or a pre-Columbian language), previous work experience, time in the U.S. and level of formal education are among the many factors that contribute to diversity in the Latino immigrant community and impact how immigrant workers relate to their coworkers (both immigrant and U.S.-born), their employers and workplace safety. These differences can play a critical role in how workers respond to hazards and must be accounted for in training content, format and messages (Brunette, 2005; O'Connor, et al., 2011).

It is also important to consider these factors in personnel decisions. Often, it is assumed that bilingual individuals hired as safety professionals or supervisors will easily relate to and be effective with the monolingual employees because they speak the same language. While language skills are essential for effective communication, it is important to account for factors such as social position, personality and experience when hiring supervisors or safety professionals (Eggerth & Flynn, 2010). The ability to speak a language does not mean that an individual has the people skills or technical knowledge necessary to be an effective leader. Finding qualified individuals can be difficult, especially in areas of the country with a limited number of bilingual individuals in the labor market. Companies must take care to not become overconfident that they have solved their language problem simply by hiring one bilingual individual.

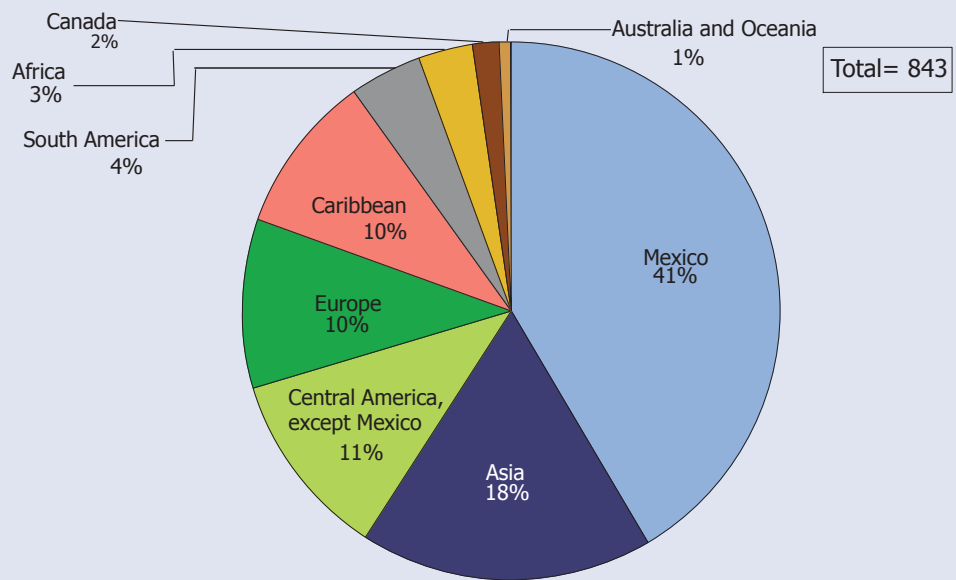
Institutional Culture as a Barrier to Safety

Another common mistake is focusing on an immigrant's culture without examining or accounting for the organizational culture or that of workers from the dominant group. The scope of this article does not allow for a detailed discussion of areas such as organizational culture, diversity and safety culture. Suffice it to say that organizations must develop an understanding of their specific culture and the degree to which relying on "the way we do things here" may inadvertently exclude workers from different backgrounds.

Germane questions may include: What value does management place on safety? Is this consistently enforced in times of both high and low productivity? How is this communicated to employees?

Figure 2

Fatal Injuries for Foreign-Born Workers, by Country or Region of Birth, 2011



Workers born in Mexico accounted for the largest portion (41 percent) of foreign-born workers who died from work-related injuries in the United States in 2011.

Note. Percentages may not add to 100 due to rounding. Reprinted from "Census of Fatal Occupational Injuries Charts, 1992-2012 (revised data)," by Bureau of Labor Statistics, U.S. Department of Labor, 2013, p. 12.

How might limited English proficiency affect this communication? What formal and informal channels are used to address safety concerns? Are these open to all workers? How might a cultural disposition to nonconfrontation with authority affect important safety information flowing from workers to supervisors and managers?

Understanding and overcoming cultural barriers to safety requires sensitivity to employees' different cultural backgrounds, knowledge of the organizational culture, and an appreciation of where these may hinder or facilitate a common understanding and practice.

Structural Realities as a Barrier to Safety

Effective communication and improved cultural understanding are not the only factors involved in improving safety for a diverse workforce. Structural realities can contribute to occupational health disparities for immigrant workers as well. Structural realities often refer to laws, policies and practices, such as large macroeconomic trends like globalization (Siqueira, Gaydos, Monforton, et al., 2013); systemic discrimination such as racism (Krieger, 2010; Krieger, Waterman, Hartman, et al., 2006); and industry practices, such as a growing reliance on temporary workers (Landsbergis, Grzywacz & LaMontagne, 2014). These realities contextualize the work experience and affect the likelihood or ability of workers or specific groups of workers to raise safety concerns.

Likewise, macroeconomic trends and industry practices also contextualize and influence the safety practices and choices of individual companies

Efforts to create institutional capacity to effectively work with a diverse workforce require both short- and long-term planning.

(NIOSH, 2008). While it is beyond the scope of this article to discuss how specific trends, policies and social attitudes may contribute to or hinder OSH, safety professionals must understand how these structural realities contribute to individual and organizational behavior.

By definition, eliminating structural barriers often requires changes in policies and practices at levels (e.g., industry, federal government, international regulatory body) beyond that of the individual worker or organization. While individual workers or organizations can advocate over time for structural change to eliminate barriers to safety, they often can take short-term actions to mitigate the effects of structural barriers on safety.

One such example relates to proper-fitting safety equipment for diverse workers. Many PPE specifications in the U.S. are based on measurements taken from military male recruits in the U.S. during the 1950s to 1970s (Spahr, Kau, Hsiao, et al., 2003). These data do not account for the range of body shapes and sizes of the modern civilian workforce and, consequently, structurally exclude many workers in today's economy. This decreases the ability to achieve good PPE fits for women, nonwhites and individuals with unique body sizes or shapes (Hsiao, Friess, Bradtmiller, et al., 2009). This is problematic because poor fit not only reduces the PPE's ability to protect the worker as designed, it may also cause a worker to reduce or eliminate its use because the gear is perceived to be either ineffective or uncomfortable (Goldenhar & Sweeney, 1996).

Current initiatives are focused on developing better methods to collect anthropometric data and ensure that datasets used to design PPE are more inclusive. For example, researchers are involved in improving the fit of respirators and fall protection harnesses for a wider range of body shapes (Hsiao, 2013; Zhuang, Benson & Viscusi, 2010). While more must be done to update anthropometric data sets and PPE for the modern workforce, NIOSH's formative research suggests that alternative-sized PPE (e.g., designed for women, unisex) may be more widely available than previously thought. However, poor advertising to those with purchasing authority and restrictive (e.g., bulk) purchasing policies within organizations often prevent these options from reaching workers (DeLaney, 2012).

Updating the anthropometric databases and creating better-fitting PPE for a wider range of workers is essential in improving safety among the diverse workforce. However, this will take time. In the meantime, a company can investigate available alternative-sized PPE and examine how it might adapt purchasing procedures to make such gear more accessible to the workforce.

Case Study

In 2009, NIOSH researchers initiated a project to develop an ergonomic awareness and work-related musculoskeletal disorder (WMSD) prevention publication for residential building contractors and workers. Based on an extensive literature review and numerous visits to residential building sites, NIOSH

researchers planned to develop a publication similar to "Simple Solutions: Ergonomics for Construction Workers" (NIOSH Publication No. 2007-122), which addresses WMSD risks related to multiple body regions and construction activities, including system installation, material component assembly and manual material handling. Focus groups were conducted in English and Spanish, respectively, with native born and immigrant residential building workers representing multiple trades to understand their perspectives on WMSD risks and prevention and their preference for communication materials.

Findings from the focus groups suggested that building workers in both groups were more likely to recognize the risk of low back injury during manual material handling than other potential WMSD risks. Participants in both groups described favoring publications with more illustrations and limited text and technical explanations (Albers & Cato, 2011). Differences between the two groups were apparent when describing potential interventions for WMSD risks, as immigrant workers were more likely to suggest worker training and work rules, rather than substituting tools and equipment for labor or utilizing different building materials.

Since the publication was intended to provide information about actionable interventions, the research team decided to limit the focus to the area that participants clearly recognized as problematic. The document published was "Simple Solutions for Home Building Workers: A Basic Guide for Preventing Manual Material Handling Injuries" [NIOSH Publication No. 2013-111 and 2013-111(Sp2013)].

Conclusion

Promoting OSH requires practical and theoretical tools that directly address diversity and inform necessary adaptations to current practices to make them more responsive to a diverse workforce. Organizations and safety professionals will increasingly be called on to develop and implement safety programs that account for this diversity. To effectively promote OSH among workers, a company must understand the diversity that currently exists in the workforce and how workers approach on-the-job safety.

Essential to this process is developing a more precise understanding of the workforce and an appreciation for the diversity that exists within groups of workers such as Latino immigrants. Translating these diverse perspectives into tailored practices and interventions will help ensure that different levels of knowledge and cultural perspectives are specifically addressed in trainings.

Efforts to create institutional capacity to effectively work with a diverse workforce require both short- and long-term planning. This capacity will be developed through targeted hiring as well as internal training. Finding inclusive ways to build institutional capacity by promoting a common destiny may be more effective than providing additional training for some groups of workers so that they fit in. This may be especially true if incentives are attached to skill building such a developing proficiency in another language.

Structural barriers to safety are difficult to address and will likely require that an organization seeks long-term solutions while also addressing short-term effects. Effectively addressing the diversity that currently exists in an organization will not only provide a foundation for integrating those workers but can also build institutional capacity that will enable an organization to more easily integrate diverse groups of workers in the future. **PS**

References

- Albers, J. & Cato, J.** (2011). *Ergonomic awareness communication for residential construction workers*. Unpublished report. Cincinnati, OH: NIOSH, Division of Applied Research and Technology.
- Batalova, J. & Terrazas, A.** (2010). Frequently requested statistics on immigrants and immigration in the U.S. Migration Information Source. Retrieved from www.migrationinformation.org/feature/display.cfm?ID=818#2
- Brown, M.P.** (2003). *An examination of occupational safety and health materials currently available in Spanish for workers as of 1999*. Washington, DC: National Research Council, National Academies Press.
- Brunette, M.** (2005). Development of educational and training materials on safety and health: Targeting Hispanic workers in the construction industry. *Family & Community Health*, 28(3), 253-266.
- Cierpich, H., Styles, L., Harrison, R., et al.** (2008). Work-related injury deaths among Hispanics—United States, 1992–2006. *Journal of the American Medical Association*, 300(21), 2479-2480.
- Congregational Budget Office.** (2005). *The role of immigrants in the U.S. labor market*. Washington, DC: Author.
- DeLaney, S.** (2012, March). Web-based marketing of alternative-sized PPE for a diverse workforce. Poster presented at the NIOSH-PPT program stakeholder meeting. Pittsburgh, PA.
- Eggerth, D.E. & Flynn, M.A.** (2010). When the Third World comes to the first: Ethical considerations when working with immigrant workers. *Ethics and Behavior* 20(3), 229-242. doi:10.1080/10508421003798968
- Eggerth, D.E., DeLaney, S.C., Flynn, M.A., et al.** (2012). Work experiences of Latina immigrants: A qualitative study. *Journal of Career Development*, 39(1), 13-30. doi:10.1177/0894845311417130
- Flynn, M.A., Check, P., Eggerth, D.E., et al.** (2013). Improving occupational safety and health among Mexican immigrant workers: A binational collaboration. *Public Health Reports: Supplement on Applying Social Determinates of Health to Public Health Practice* 128, (Supplement 3): 33-38.
- Gany, F., Dobslaw, R., Ramirez, J., et al.** (2011). Mexican urban occupational health in the U.S.: A population at risk. *Journal of Community Health*, 36(2), 175-179. doi:10.1007/s10900-010-9295-9
- Goldenhart, L.M. & Sweeney, M.H.** (1996). Tradeswomen's perspectives on occupational health and safety: A qualitative investigation. *American Journal of Industrial Medicine*, 29(5), 516-520.
- Gomberg-Muñoz, R.** (2010). Willing to work: Agency and vulnerability in an undocumented immigrant network. *American Anthropologist*, 112(2), 295-307. doi:10.1111/j.1548-1433.2010.01227.x
- Gouveia, L. & Saenz, R.** (2000). Global forces and Latino population growth in the Midwest: A regional and subregional analysis. *Great Plains Research*, 10, 305-328.
- Hsiao, H.** (2013). Anthropometric procedures for protective equipment sizing and design. *Human Factors*, 55(1), 6-35
- Hsiao, H., Friess, M., Bradtmiller, B., et al.** (2009). Development of sizing structure for fall arrest harness design. *Ergonomics*, 52(9), 1128-1143. doi:10.1080/00140130902919105
- Johnson, K.M. & Lichter, D.T.** (2010). Growing diversity among America's children and youth: Spatial and temporal dimensions. *Population and Development Review*, 36(1), 151-176. doi:10.1111/j.1728-4457.2010.00322.x
- Koonce, R.** (2001). Redefining diversity: It's not just the right thing to do; it also makes good business sense. *Training and Development*, 55(12), 22-33.
- Krieger, N.** (2010). Workers are people too: Societal aspects of occupational health disparities: An ecosocial perspective. *American Journal of Industrial Medicine*, 53(2), 104-115. doi:10.1002/ajim.20759
- Krieger, N., Waterman, P.D., Hartman, C., et al.** (2006). Social hazards on the job: Workplace abuse, sexual harassment, and racial discrimination—A study of black, Latino and white low-income women and men workers in the U.S. *International Journal of Health Services*, 36(1), 51-85.
- Landsbergis, P.A., Grzywacz, J.G. & LaMontagne, A.D.** (2014). Work organization, job insecurity and occupational health disparities. *American Journal of Industrial Medicine*, 57(5), 495-515.
- Leigh, J.P.** (2011). Economic burden of occupational injury and illness in the U.S. *The Milbank Quarterly*, 89(4), 728-772.
- NIOSH.** (2008). NORA construction agenda. Retrieved from www.cdc.gov/niosh/nora/comment/agendas/construction/pdfs/ConstOct2008.pdf
- National Research Council.** (2012). *Aging and the macro economy. Long-term implications of an older population*. Washington, DC: National Academy Press.
- O'Connor, T., Flynn, M.A., Weinstock, D., et al.** (2011). Education and training for underserved populations. Paper presented at the Eliminating Health and Safety Disparities at Work Conference, Chicago, IL.
- O'Connor, T., Loomis, D., Runyan, C., et al.** (2005). Adequacy of health and safety training among young Latino construction workers. *Journal of Occupational and Environmental Medicine*, 47(3), 272-277.
- Passel, J.S. & Cohn, D.V.** (2008). *U.S. population projections: 2005-2050*. Washington, DC: Pew Research Center.
- Pew Research Center.** (2005). *The new Latino south: The context and consequences of rapid population growth* (pp.1-45). Washington, DC: Author, Hispanic Center.
- Sarkar, M.** (2002). Women in construction. Home Economics. Retrieved from <http://secure.builderbooks.com/publications/HE/2002sep/Sarkar-0902.pdf>
- Siqueira, C.E., Gaydos, M., Monforton, C., et al.** (2014). Effects of social, economic and labor policies on occupational health disparities. *American Journal of Industrial Medicine*, 57(5), 557-572.
- Spahr, J., Kau, T., Hsiao, H., et al.** (2003, Oct.). Anthropometric differences among Hispanic occupational groups. Paper presented at the National Occupational Injury Research Symposium. Pittsburgh, PA.
- Waterstone, M.E.** (2010). Returning veterans and disability law. *Notre Dame Law Review*, 85(3), 1081-1132.
- Zhuang, Z., Benson, S. & Viscusi, D.** (2010). Digital 3-D headforms with facial features representative of the current U.S. workforce. *Ergonomics*, 53(5), 661-71. doi:10.1080/00140130903581656

Disclaimer
The findings and conclusions in this article are those of the author and do not necessarily represent the views of NIOSH.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.