

Exponent®
Engineering & Scientific Consulting

Tiffani Fordyce, Ph.D., M.P.H.

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Professional Profile

Dr. Fordyce brings over 24 years of expertise in epidemiologic research, specializing in cohort and case-control study designs. She has extensive experience developing and managing research protocols, study execution, statistical analyses, and data collection and management essential to epidemiologic investigations. Her work for national defense, energy, and other industry sectors helps ensure worker protection of our nation's most critical workforce.

For over a decade, Dr. Fordyce's work has included leading large-scale, industry-wide occupational injury surveillance programs to monitor injury incidence and outcomes. Additionally, since 2007, she has managed multiple cohort mortality studies, applying rigorous epidemiologic methods to assess long-term health outcomes related to occupational exposures. Currently, as Principal Investigator for an award funded by the Department of Defense's Congressionally Directed Medical Research Program, she is conducting a cohort mortality study alongside development of a job exposure matrix, integrating exposure assessment with epidemiologic analysis.

Dr. Fordyce's epidemiologic experience also encompasses comprehensive evaluation of exposure data and disease outcomes to elucidate the relationships between air pollution, specifically PM2.5 exposure, and adverse health outcomes.

Dr. Fordyce's epidemiologic expertise extends to conducting systematic reviews and critical evaluations of healthcare utilization, disease treatment patterns, and adverse health events. Her research also encompasses traffic safety epidemiology, including studies on vehicle field performance, safety device effectiveness, and behavioral risk factors. Her occupational epidemiology research has focused on risk factors and disease outcomes related to lung cancer, mesothelioma, and various non-malignant diseases. Dr. Fordyce has also contributed to the synthesis and interpretation of asbestos-related scientific literature, supporting expert testimony and litigation contexts.

Prior to joining Exponent, Dr. Fordyce served as a Social Science Research Assistant II at the University of Michigan Transportation Research Institute in the Social and Behavioral Analysis division. While at Exponent, Dr. Fordyce continues to advance the state-of-knowledge related to occupational exposure and potential adverse health outcomes, through her contribution to peer-reviewed literature and continued research grant funding.

Academic Credentials & Professional Honors

M.S., Clinical Research Administration, Walden University, 2016

Ph.D., Public Health, Walden University, 2015

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M.P.H., Public Health, California College of Health Sciences, 2007

B.A., Psychology, University of Michigan, Dearborn, 1997

James B. Angell Scholar

Prior Experience

Social Science Research Assistant II, University of Michigan Transportation Research Institute (UMTRI), 1999-2001

Assistant Program Manager, HelpSource, 1997-1999

Professional Affiliations

American College of Epidemiology, Member, Professional Development Committee

American Public Health Association (APHA), Member

International Epidemiological Association, Member

Society for Epidemiologic Research, Member

Publications

Fordyce TA, Leonhard MJ, Jung AM, Lin J, Watson H, Heldt GH, Boffetta P. An updated mortality study of beryllium workers, 1925-2020. Journal of Occupational and Environmental Medicine 2025; 67(10): e679-e689.

Vergara X, Bhatnagar M, Fordyce TA. Exploratory narrative text analysis to characterize tasks associated with injuries among electric utility line workers: EPRI Occupational Health and Safety Database 1995–2013. American Journal of Industrial Medicine 2021 Mar; 64(3):198-207.

Fordyce TA, Leonhard MJ, Mowat F, Moolgavkar S. Response to Finkelstein Re: the Fordyce et al. Vermont Talc Miners and Millers Cohort Study Update. Journal of Occupational and Environmental Medicine 2020 Apr; 62(4):e172-e173.

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Fordyce TA, Leonhard MJ, Chang ET. A critical review of developmental exposure to particulate matter, autism spectrum disorder, and attention deficit hyperactivity disorder. Journal of Environmental Science and Health Part A 2018 Jan 28; 53(2):174-204.

Volberg V, Fordyce T, Leonhard M, Mezei G, Vergara X, Krishen L. Injuries among electric power industry workers, 1995-2013. Journal of Safety Research 2017 Feb 1; 60:9-16.

Boffetta P, Fordyce TA, Mandel JS. A mortality study of beryllium workers. Cancer Medicine 2016 Dec; 5(12):3596-605.

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Boffetta P, Fordyce, TA, Mandel J. A mortality study of workers exposed to insoluble forms of beryllium. European Journal of Cancer Prevention 2014; 23(6):587-593.

Kelsh MA, Shum MS, Sheppard AR, McNeely M, Kuster N, Lau E, Wielding R, Fordyce T, Sulser C. Measured radiofrequency exposure in various mobile phone-use scenarios. Journal of Exposure Science and Environmental Epidemiology 2011 Jul; 21(4):343-54

Fordyce T, Morimoto L, Kelsh M, Coalson, J, Mezei G. Neck injuries among electric utility workers: 1995-2007. Journal of Occupational and Environmental Medicine 2010; 52(4):441-449.

Bracken T, Kavet R, Patterson R, Fordyce T. An integrated job exposure matrix for electrical exposures of utility workers. J Occup Environ Hyg 2009 Aug; 6(8):499-509.

Kelsh MA, Fordyce TA, Lau EC, Mink PJ, Morimoto LM, Lu ET, Yager JW. Factors that distinguish serious versus less severe strain and sprain injuries: an analysis of electric utility workers. Am J Ind Med 2009; 52:210-220.

Fordyce TA, Kelsh MA, Lu E, Sahl JD, Yager JW. Thermal burn and electric shock injuries among electric utility workers 1995-2004. Burns 2007; 33:209-220.

Fordyce TA, Van Selow W, Resnick HT. Crashes accompanied by fire: what do the accident data tell us? SAE World Congress, SAE 2006 Transactions Journal of Passenger Cars: Mechanical Systems 2007; 710-720.

Ramachandran K, Fordyce TA, Ray R, Resnick HT. The relationship between airbags and injuries. SAE World Congress, SAE Technical Paper 2005-01-1231, Detroit, MI, 2005.

Kelsh MA, Lu ET, Ramachandran K, Jesser C, Fordyce TA, Yager JW. Occupational injury surveillance among electric utility employees. J Occup Environ Med 2004; 46(9):974-84.

Eby DW, Molnar LJ, Shope JT, Vivoda, JM, Fordyce, TA. Improving older driver knowledge and awareness through self-assessment: the driving decisions workbook. Journal of Safety Research 2003; 34(4):371-381.

Eby DW, Fordyce TA, Vivoda JM. A comparison of safety belt use in commercial and noncommercial vehicles. Accident Analysis and Prevention 2002; 34:285-291.

Eby DW, Vivoda JM, Fordyce TA. The effects of standard enforcement on Michigan safety belt use. Accident Analysis and Prevention 2002; 34:101-109.

Presentations

Kremer J, Fordyce TA, Roubenoff EM, Lin J, Leonhard MJ. Applications of statistical analysis methods to sparse data at low fine particulate matter concentrations. Presented at the Society for Risk Analysis Annual Meeting, Washington DC, December 2025

Fordyce TA, Jung AM, Lin J, Watson H, Heldt G, Leonhard MJ, Boffetta P. An updated mortality study of beryllium workers, 1925-2020. Presented at the 12th Conference on Metal Toxicity and Carcinogenesis.

Port Jefferson, NY, October 2025.

Fryzek, J, Fordyce TA, Moynihan, E., Sorensen HT. Leveraging Denmark's National Health Registries to advance rare disease research and clinical development. Presented at the 2025 National Organization for Rare Disorders (NORD®) Breakthrough Summit, Washington DC, October 2025.

Leonhard MJ, Fordyce TA, Roubenoff EM, Kremer J, Lin J. Applications of statistical analysis methods to sparse data at low fine particulate matter concentrations. Presented at the 2025 Health Effects Institute Annual Meeting, Austin, TX, May 2025.

Jung AM, Roubenoff EM, Hasan AM, Leonhard MJ, Omaranian E, Lin J, Fordyce TA. Statistical methods to assess sparse data at low PM2.5 concentrations. Presented at the 2024 Society for Epidemiologic Research Annual Meeting, Austin, TX, June 2024.

Fordyce TA, Leonhard MJ, Vergara XP, Bauman E. Trends in injuries and fatalities for electric power workers. Presented at the National Occupational Injury Research Symposium (NOIRS), Morgantown, WV, October 2018.

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Erickson, H, Fordyce TA, Leonhard MJ, Satin K. Leukemias in a cohort of crude oil workers, 1946-2012. Presented at the American College of Epidemiology Annual Meeting, New Orleans, LA, September 2017.

Leonhard MJ, Fordyce TA, Vergara XP, Bauman E. Injury outcomes for falls in older workers and by occupational group: electric energy workers, 1995-2016. Presented at the American College of Epidemiology Annual Meeting, New Orleans, LA, September 2017.

Fordyce TA, Leonhard MJ, Vergara XP, Krishen L. Injuries among older electric energy workers, 1995-2014. Presented at the American Public Health Association 144th Annual Meeting, Denver, CO, November 2016.

Fordyce TA, Leonhard MJ, Vergara XP, Krishen L. Injury risk profiles and outcomes by type of fall: electric energy workers, 1995-2014. Presented at the American Public Health Association 141st Annual Meeting, Denver, CO, November 2016.

Leonhard MJ, Fordyce TA, Vergara XP, Krishen L. An analysis of sprains and strains among electric energy workers, 1995-2014. Presented at the American Public Health Association 141st Annual Meeting, Denver, CO, November 2016.

Boffetta P, Fordyce TA, Mandel J. Occupational exposure to beryllium and mortality from lung cancer and beryllium disease. Presented at the 48th Annual Meeting of the Society for Epidemiologic Research, Denver, CO, June 2015.

Fordyce TA, Volberg V, Mezei G, Vergara X, Krishen L. An in-depth analysis of fall related injuries among electric power industry workers, 1995-2013. Presented at the Centers for Disease Control and Prevention (CDC) National Occupational Injury Research Symposium, Kingwood, WV, May 2015.

Volberg V, Fordyce TA, Mezei G, Vergara X, Krishen L. Injuries among electric power industry workers, 1995-2013. Presented at the Centers for Disease Control and Prevention (CDC) National Occupational Injury Research Symposium, Kingwood, WV, May 2015.

Leonhard M, Fordyce TA, Volberg V, Mezei G, Vergara X, Krishen L. Injuries from motor vehicle crashes among electric power industry workers, 1995-2013. Presented at the Centers for Disease Control and Prevention (CDC) National Occupational Injury Research Symposium, Kingwood, WV, May 2015.

Fordyce TA. Crash risk associated with cellular phone use while driving. Presented at the American Public Health Association 141st Annual Meeting, Boston, MA, November 2013.

Vergara X, Mezei G, Fordyce TA, Campleman S. Occupational injury surveillance for the electric utility industry guiding ergonomics research and interventions. Presented at the American Public Health Association 140th Annual Meeting, San Francisco, CA, October 2012.

Fordyce TA, Mowat FS, Fryzek J, Lau EL. Incidence of metastatic hormone receptor positive (HR+) breast cancer in the United Kingdom (UK): data needed! Presented at the International Society for Pharmacoeconomics and Outcomes Research, Washington, DC, June 2012.

Fordyce TA, Kelsh MA. Injury data analysis to evaluate the effectiveness of ergonomic interventions. Presented at the Centers for Disease Control and Prevention (CDC) National Occupational Injury Research Symposium, Morgantown, WV, October 2011.

Fordyce TA, Kelsh MA, Lau E. Using state crash data to assess the risk of cell phone use while driving. Presented at the Lifesavers Conference, Nashville, TN, March 2009.

Fordyce TA, Kelsh MA, Lau E. Characterization of motor vehicle crashes involving cell phone use in New York. Presented at the Lifesavers Conference, Nashville, TN, March 2009.

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Fordyce TA, Van Selow W, Resnick HT. Motorcycle lane splitting. Presented at the Lifesavers Conference, Chicago, IL, March 2007.

Fordyce TA, Kelsh MA. Work-related motor vehicle crashes among electric utility workers. Presented at the Lifesavers Conference, Chicago, IL, March 2007.

Fordyce TA, Van Selow W, Resnick HT. Crashes accompanied by fire: what do the accident data tell us? Presented at 2006 Traffic Records Forum, Palm Desert, CA, July 2006.

Kelsh MA, Shum M, Fordyce TA, Sheppard, AR. Evaluation of power output of software modified mobile phones as a function of time of day. Presented at Bioelectromagnetics Society Annual Meeting, Cancun, Mexico, June 2006.

Fordyce TA, Van Selow W, Resnick HT. Crashes accompanied by fire: what do the accident data tell us? Presented at Society of Automotive Engineers (SAE) 2006 World Congress & Exhibition, Detroit, MI, April

2006.

Fordyce TA, Van Selow W, Resnick HT. Crashes accompanied by fire. Presented at the Lifesavers Conference, Austin, TX, April 2006.

Fordyce TA. The use of data from multiple states to identify and evaluate traffic safety issues. Presented at 2005 Traffic Records Forum, Buffalo, NY, July 31-August 4, 2005 (Session Moderator).

Van Selow W, Ramachandran K, Fordyce TA. Application of state data: effectiveness of side airbags and FMVSS 214 in injury prevention. Presented at 2005 Traffic Records Forum, Buffalo, NY, July 31-August 4, 2005.

Ramachandran K, Fordyce TA. What is the safest seating position for young children? Presented at the Lifesavers Conference, Charlotte, NC, March 2005.

Ramachandran K, Fordyce TA, Ray RM, Resnick HT. The relationship between airbags and injuries. Presented at Society of Automotive Engineers (SAE) 2005 World Congress & Exhibition, Detroit, MI, April 2005.

Ray RM, Fordyce TA, Ramachandran K. Is there really an increased crash risk associated with cellular phone use while driving? Presented at the Society for Risk Analysis 2004 Annual Meeting, Palm Springs, CA, December 2004.

Kelsh MA, Lu ET, Ramachandran K, Jesser C, Fordyce TA, Yager JW. Occupational injury surveillance among electric utility employees. Presented at the 37th Annual Meeting of the Society for Epidemiologic Research, Salt Lake City, UT, June 2004.

Ray RM, Ramachandran K, Fordyce TA. Effectiveness of side airbags and FMVSS 214 in injury prevention. Presented at the International Traffic Medicine Association, Budapest, Hungary, September 2003.

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Technical Reports

EPRI occupational health and safety annual report 2016: occupational Health and safety trends 1995-2014. EPRI, Palo Alto, CA, 2016.

EPRI occupational health and safety annual report 2015: occupational health and safety trends 1995-2013. EPRI, Palo Alto, CA, 2015.

Occupational health and safety 1995-2013. Injury surveillance highlights - focus on injury severity. EPRI, Palo Alto, CA, 2015.

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EPRI occupational health and safety database 2013: annual data reporting years 1995-2012. EPRI, Palo Alto, CA, 2014.

EPRI occupational health and safety annual report 2009: occupational health and safety trends 1995-2008. EPRI, Palo Alto, CA, 2009.

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Electric energy industry workforce: trends in motor vehicle crashes. EPRI, Palo Alto, CA, 2007.

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Donelson AC, Fordyce TA, Zhao K, Phillips, E. The effectiveness of retroreflective tape on heavy trailers: a review and assessment of NHTSA's conspicuity study. Exponent Failure Analysis Associates, Menlo Park, CA, 2002.

Vivoda JM, Fordyce TA, Eby DW, Kostyniuk LP. Safety belt use in Michigan's upper peninsula. Report No. UMTRI-2000-43. University of Michigan Transportation Research Institute, Ann Arbor, MI, 2000.

Eby DW, Fordyce TA, Vivoda JM. Safety belt use in five Wayne County communities. Fall 2000 Report No. UMTRI-2000-46. University of Michigan Transportation Research Institute, Ann Arbor, MI, 2000.

Eby DW, Fordyce TA, Vivoda JM. Direct observation of safety belt use in Michigan. Fall 2000. Report No. UMTRI-2000-45. University of Michigan Transportation Research Institute, Ann Arbor, MI, 2000.

Eby DW, Fordyce TA, Vivoda JM. Michigan safety belt use immediately following implementation of standard enforcement. Report No. UMTRI-2000-25. University of Michigan Transportation Research Institute, Ann Arbor, MI, 2000.

Eby DW, Kostyniuk LP, Vivoda JM, Fordyce TA. Patterns of child restraint use in Michigan. Report No. UMTRI-2000-30. University of Michigan Transportation Research Institute, Ann Arbor, MI, 2000.

Eby DW, Molnar LJ, Shope JT, Vivoda, JM, Fordyce, TA. Improvement of older driver safety through self-evaluation: the development of a self-evaluation instrument. Report No. UMTRI-2000-04. University of Michigan Transportation Research Institute, Ann Arbor, MI, 2000.

Eby DW, Vivoda JM, Fordyce TA. The effect of standard enforcement on Michigan safety belt use: a 3-month follow-up. Report No. UMTRI-2000-33. University of Michigan Transportation Research Institute, Ann Arbor, MI, 2000.

Eby DW, Vivoda JM, Fordyce TA. A study of Michigan safety belt use prior to implementation of standard enforcement. Report No. UMTRI-2000-08. University of Michigan Transportation Research Institute, Ann Arbor, MI, 2000.

Eby DW, Vivoda JM, Fordyce TA. Direct observation of safety belt use in Michigan. Fall 1999, Report No. UMTRI-99-33. University of Michigan Transportation Research Institute, Ann Arbor, MI, 2000.

Eby DW, Vivoda JM, Fordyce TA. Safety belt use in five Wayne County communities. Fall 1999 Report No. UMTRI-99-35. University of Michigan Transportation Research Institute, Ann Arbor, MI, 1999.

Editorships & Editorial Review Boards

Editorial Board Member, Annals of Epidemiology