

Heather N. Watson, Ph.D.
Senior Scientist

Professional Profile

Dr. Heather N. Watson is a Senior Scientist in Exponent's Statistical and Data Sciences practice. Dr. Watson specializes in biostatistics and has extensive experience in the statistical analysis of hospital discharge databases, medical claims databases, and accident databases. She also has experience in spatial analysis, sampling methods, experimental design, data mining, and risk analysis.

Dr. Watson has collaborated with biomechanical engineers to investigate injury patterns of pedestrians in motor vehicle accidents using the National Automotive Sampling System; she has worked with scientists in health on epidemiologic studies examining the incidence and treatment of glaucoma patients, studying revision rates after insertion of cardiovascular stents, or looking at treatment patterns by cancer type from electronic medical records. In addition, she has teamed with engineers to inspect failure trends of identification cards issued. She has experience using Medicare claim records, claims databases, NASS CDS, NASS GES, NFIRS, NEISS and other hospital discharge datasets, such as NIS, NHAMCS and NAMCS.

Before joining Exponent, Dr. Watson attended New York University and served as a graduate assistant in the Division of Biostatistics at New York University, School of Medicine. Her background is in biology and mathematics. Her thesis research includes the application of statistical methods to local clustering of disease, focused clustering of disease near a putative hazard, and disease mapping utilizing Bayesian hierarchical modeling.

Academic Credentials and Professional Honors

Ph.D., Environmental Health Science, New York University, 2008
B.A., Mathematics and Biology, Claremont McKenna College, 2002

Publications

Heller MF, Imler SM, Zhao K, Watson HN, Corrigan CF. The effect of frontal collision delta-V and restraint status on injury outcome. Society of Automotive Engineers (SAE) Technical Paper 2010-01-0145, 2010.

Imler SM, Heller MF, Zhao K, Watson HN, Corrigan CF. The effect of side impact collision delta-V, restraint status, and occupant position on injury outcome. Society of Automotive Engineers (SAE) Technical Paper 2010-01-1158, 2010.

Heller MF, Prange MT, Ong KL, Watson HN, Iyer M, Ivarsson BJ, Fisher JL. Injury patterns among special populations involved in pedestrian crashes. Society of Automotive Engineers (SAE) Technical Paper 2010-01-1165, 2010.

Prange MT, Heller MF, Watson HN, Iyer M, Ivarsson BJ, Fisher JL. Age effects on injury patterns in pedestrian crashes. Society of Automotive Engineers (SAE) Technical Paper 2010-01-1164, 2010.

Heller MF, Watson HN, Ivarsson BJ, Prange MT, Fisher JL. Using national databases to evaluate injury patterns in pedestrian impacts. Society of Automotive Engineers (SAE) Technical Paper 2009-01-1209, 2009.

Moore T, Fisher J, Heller M, Lau E, Watson H, Ong K. Occupant injury in motor vehicle collisions: Using field accident data from multiple sources. Society of Automotive Engineers (SAE) Technical Paper 2009-01-0394, 2009.

Yim J, Zhu L-C, Chiriboga L, Watson HN, Goldberg JD, Moreira AL. Histologic features are important prognostic indicators in early stages lung adenocarcinomas. *Modern Pathology* 2007; 20:233.

Book Chapters

Goldberg JD, Watson HN, Friedman, HP. Meta-analysis in clinical risk assessment. *Encyclopedia of Quantitative Risk Assessment*. Melnick E, Everitt BS (eds), John Wiley & Sons, Ltd., Chichester, UK, 2008.

Presentations

Watson H. Using the National Inpatient Sample (NIS) database to identify injury patterns from external causes of injury. Presentation, Joint Statistical Meeting, Vancouver, Canada, 2010.

Watson H, Goldberg JD. Extensions of spatial statistical methods to incorporate spatial dependency and time constraints with application to breast cancer incidence in New York State. Presentation, New York University, School of Medicine, Department of Environmental Health, New York, NY, 2008.

Watson H, Goldberg JD, Liu M. Spatial analysis of breast cancer incidence in Rockland County, New York County, and Western Queens County. Presentation, Joint Statistical Meeting, Salt Lake City, UT, 2007.

Watson H, Goldberg JD, Liu M. Spatial statistical methods for small-area health data with application to the association of breast cancer incidence and local power plant emissions. Presentation, Joint Statistical Meeting, Seattle, WA, 2006.

Professional Affiliations

- American Statistical Association
- Institute of Mathematical Statistics