



Location

Durango, CO

Phone

720-879-1162

Email

ngrugle@cognizantforensics.com

Website

www.cognizantforensics.com

Nancy L. Grugle, PH.D., CHFP

Driver Actions, Drowsy Driving, Distracted Driving, Impaired Driving, Looming, Nighttime Visibility, Conspicuity, Perception-Reaction Time, Advanced Driver Assistance Systems

Experience

2026-present

Human Factors Expert | Cognizant Forensics | Durango, CO

- Perform forensic investigations involving human factors
- Conduct forensic human factors investigations in transportation-related cases involving drowsy driving, distracted driving, impaired driving, looming, nighttime visibility, positive guidance and expectancy, and perception-reaction time.

2024-present

Human Factors Expert | Evidence Solutions, Inc. | Durango, CO

- Perform forensic investigations involving human factors
- Provide reports and testimony related to human performance and behavior including, but not limited to, driver actions, fatigue/sleep deprivation, distracted driving, looming, visibility/conspicuity, positive guidance and expectancy, and perception-reaction time.

2020-2023

Human Factors Expert | Exigent Group Limited | Durango, CO

- Conducted human factors investigations and analysis
- Wrote reports and provided testimony for purposes of litigation
- Areas of specialization included distracted driving, drowsy driving, autonomous driving, looming, driver behavior, perception-reaction time, work zone safety, sleep deprivation, fatigue and shift work.

2013-2020

Human Factors Expert | Robson Forensic | Denver, CO

- Provided technical investigations, analysis, reports, and testimony toward the resolution of commercial and personal injury litigation involving human factors / ergonomics
- Driver performance, distracted driving, drowsy driving, and work zone safety
- Sleep deprivation, fatigue, and shift work.

2007-2013

Staff Human Factors Engineer | Lockheed Martin | Colorado Springs, CO

- Designed and evaluated software user interfaces; conducted usability experiments, evaluated statistical results, and presented findings
- Conducted ergonomic and human factors evaluations of military products and equipment
- Investigated human factors aspects of critical safety and operations incidents including the effects of sleep deprivation and shift work
- Developed and implemented human factors engineering training sessions for software developers and systems engineers



COGNIZANT
FORENSICS

Location

Durango, CO

Phone

720-879-1162

Email

ngrugle@cognizantforensics.com

Website

www.cognizantforensics.com

Experience Cont'd

2005-2007

Assistant Professor | Cleveland State University | Cleveland, OH

- Directed the University Transportation Center Driving Simulator Laboratory
- Researched the effects of distracted driving in work zones
- Designed experiments for work zone safety research projects, analyzed large data samples and published results
- Taught human factors engineering, experimental design/research methods, probability and statistics, and work design courses

2003-2005

Co-Principal Investigator/Study Manager | WRAIR | Silver Spring, MD

- Researched the effects of sleep deprivation on human performance, situation awareness and cognitive function.
- Prepared weekly experimental study runs to include the following: configuring equipment, preparing testing materials, and downloading data
- Recruited, screened, and scheduled study participants
- Trained student staff on experimental procedures and cognitive test administration

2001-2002

Human Factors Engineer | Lockheed Martin Systems Integration | Owego, NY

- Assessed situation awareness and workload for pilots operating unmanned vehicles (drones)
- Designed graphical user interface for drone software
- Conducted usability experiments for U.S. Navy helicopter
- Performed aircraft maintainability analysis U.S. Air Force aircraft

2000

Research Engineer | Army Research Laboratory | Aberdeen Proving Ground, MD

- Performed usability evaluation of vehicles
- Modeled human performance
- Conducted research on team performance measurement methodologies

Leadership Experience

Faculty Advisor, Institute of Industrial Engineers | Cleveland State University | Cleveland, OH

- Coordinated professional speakers
- Assisted in planning Institute of Industrial Engineers activities and fundraisers
- Oversaw budget preparation, submission, and expenditures

Presidential Appointee, Patent Committee | Cleveland State University | Cleveland, OH

- Evaluated merit of patent protection applications at Cleveland State University
- Made recommendations for provisional protection of patent applications

Member, University Transportation Center Research Selection Committee | Cleveland State University | Cleveland, OH

- Developed research selection policies and procedures for the University Transportation Center
- Presented research in progress at University Transportation Center Advisory Board meeting
- Assisted in soliciting funds for research to be conducted under the University Transportation Center

Secretary, Rocky Mountain Chapter | Human Factors and Ergonomics Society | Denver, CO



Location

Durango, CO

Phone

720-879-1162

Email

ngrugle@cognizantforensics.com

Website

www.cognizantforensics.com

Education

2005

Ph.D. | Industrial and Systems Engineering (Human Factors) | Virginia Tech

2001

M.S. | Industrial and Systems Engineering (Human Factors) | Virginia Tech

1999

B.S. | Industrial and Systems Engineering | Ohio University

Professional Credentials

2016

Certified Human Factors Professional | Board of Certification in Professional Ergonomics

Publications and Presentations

Grugle, N. (2025). Understanding Human Factors. *Attorney At Law Magazine*, August, 77.

Grugle, N. (2025). They Did What?! Analyzing Human Behavior from a Human Factors Perspective. *Trial Lawyer (Oregon Trial Lawyers Association)*, Winter Issue, 44-46.

Grugle, N. (2024). Human Factors in Transportation Cases: Getting the Most Out of Your Human Factors Expert. *Arizona Attorney Expert Witness Special Issue*, March, 14-18.

Grugle, N. (2023). "Human Factors in Transportation Cases: A Case Illustration." Presentation given at Washington State Association of Justice 2023 Annual Meeting and Convention, Vancouver, BC.

Grugle, N. (2022). "The science of distracted driving and what makes it so dangerous." Presentation given at American Association of Justice, Seattle, WA.

Grugle, N., Hooper, R., and Miersma, E. (2022). "Experts, Experts Everywhere! An update on human factors, biomechanics, and trucking experts." Presentation given at Defense Research Institute DRI Trucking Law Seminar, Austin, TX.

Grugle, N. (2019). Human Factors in Autonomous Vehicles. *Tortsource*, Fall, 22(1).

Grugle, N. (2019). "Looming." Presentation given at Ohio Association of Justice Winter Convention, Cleveland, OH.

Grugle, N. (2019). "The Myth of Human Error." Presentation given at Rocky Mountain Paralegal Association, Denver, CO.

Grugle, N. (2019). "Looming." Presentation given at American Association of Justice (AAJ) Jazz Fest Seminar: Auto and Truck Litigation, New Orleans, LA.

Grugle, N. (2019). "Distracted Driving." Presentation given at American Bar Association Transportation Megaconference, New Orleans, LA.

Grugle, N. and Boesger, J. (2019). "Asleep at the Wheel: Sleep Deprivation and Fatigue in Commercial Truck Driving." Presentation given at 360 Advocacy: How to Win Trucking Cases Conference, Las Vegas, NV.

Grugle, N. (2018). "Distracted Driving in Trucking Cases." Presentation given at Ohio Association for Justice, Columbus, OH.

Grugle, N. (2018). "Distracted Driving." Presentation given at Washington State Association for Justice Annual Meeting and Convention, Seattle, WA.



COGNIZANT
FORENSICS

Location

Durango, CO

Phone

720-879-1162

Email

ngrugle@cognizantforensics.com

Website

www.cognizantforensics.com

Publications and Presentations Cont'd

Grugle, N. (2017). "Human Factors in Distracted Driving Crashes." Presentation given at Southern Arizona Traffic Investigators Seminar, Tucson, AZ.

Grugle, N. (2017). "The Epidemic of Distracted Driving." Presentation given at Michigan Association of Justice (MAJ) No-Fault Institute XIV, Dearborn, MI.

Grugle, N. (2016). "The Epidemic of Distracted Driving." Presentation given at New Jersey Association of Justice Meadowlands Seminar, East Rutherford, NJ.

Grugle, N. (2016). "The Myth of Human Error: Applying Human Factors to your Cases." Presentation given at Palm Beach County Justice Association SCOPE X Attorney Seminar, West Palm Beach, FL.

Grugle, N. (2016). "The Epidemic of Distracted Driving." Presentation given at Philadelphia Bar Association Bench-Bar, Atlantic City, NJ.

Grugle, N. (2016). "The Epidemic of Distracted Driving." Presentation given at New Jersey Association of Justice, Meadowlands, NJ.

Grugle, N. (2016). "The Myth of Human Error: Applying Human Factors to your Cases." Presentation given at Western Trial Lawyers Association, Steamboat Springs, CO.

Grugle, N. and Schaible, R. (2015). PS Asks about Sleep Deprivation: Nancy Grugle and Ron Schaible. *Professional Safety*, June, 34-39.

Grugle, N.L. and Rugemer, B. (2014). "Asleep at the Wheel: Sleep Deprivation and Fatigue in Commercial Truck Driving." Presentation given at The Association of Plaintiff Interstate Trucking Lawyers of America Conference Super Summit III, St. Louis, MO.

Grugle, N.L. (2014). "Human Factors of Distracted Driving." Presentation given at Western Trial Lawyers Association, Lake Tahoe, CA and Florida Justice Association, Park City, UT.

Grugle, N.L. (2013). "I Didn't See Him: The Human Factors of Failure-to-Yield Motorcycle Crashes." Presentation given at Florida Justice Association, Tampa, FL.

Killgore, W.D., Grugle, N.L., and Balkin, T.J. (2012). Gambling when sleep deprived: don't bet on stimulants. *Chronobiology International*, 29(1), 43-54.

Killgore, W.D., Grugle, N.L., Killgore, D.B., and Balkin, T.J. (2010). Sex differences in self-reported risk-taking propensity on the Evaluation of Risks scale. *Psychological Reports*, 106(3), 693-700.

Killgore, W.D., Killgore, D.B., Grugle, N.L., and Balkin, T.J. (2010). Odor identification ability predicts executive function deficits following sleep deprivation. *International Journal of Neuroscience*, 120(5), 328- 34.

Killgore, W.D., Grugle, N.L., Reichardt, R.M., Killgore, D.B., and Balkin, T.J. (2009). Executive functions and the ability to sustain vigilance during sleep loss. *Aviation Space and Environmental Medicine*, 80(2), 81-7.

Killgore, W.D., Kahn-Greene, E.T., Grugle, N.L., Killgore, D.B., and Balkin, T.J. (2009). Sustaining executive functions during sleep deprivation: A comparison of caffeine, dextroamphetamine, and modafinil. *Sleep*, 32(2), 205-16.

Killgore, W.D., Lipizzi, E.L., Grugle, N.L., Killgore, D.B., and Balkin, T.J. (2009). Handedness correlates with actigraphically measured sleep in a controlled environment. *Perceptual Motor Skills*, 109(2), 395-400.



COGNIZANT
FORENSICS

Location

Durango, CO

Phone

720-879-1162

Email

ngrugle@cognizantforensics.com

Website

www.cognizantforensics.com

Publications and Presentations Cont'd

Killgore, W.D., Grugle, N.L., Killgore, D.B., Leavitt, B.P., Watlington, G.I., McNair, S., and Balkin, T.J. (2008). Restoration of risk-propensity during sleep deprivation: caffeine, dextroamphetamine, and modafinil. *Aviation Space and Environmental Medicine*, 79(9), 867-74.

Killgore, W.D., Muckle, A.E., Grugle, N.L., Killgore, D.B., and Balkin, T.J. (2008). Sex differences in cognitive estimation during sleep deprivation: effects of stimulant countermeasures. *International Journal of Neuroscience*, 118(11), 1547-57.

Killgore, W.D., Rupp, T.L., Grugle, N.L., Reichardt, R.M., Lipizzi, E.L., and Balkin, T.J. (2008). Effects of dextroamphetamine, caffeine and modafinil on psychomotor vigilance test performance after 44 h of continuous wakefulness. *Journal of Sleep Research*, 17(3), 309-21.

Huck, N.O., McBride, S.A., Kendall, A.P., Grugle, N.L., and Killgore, W.D. (2008). The effects of modafinil, caffeine, and dextroamphetamine on judgments of simple versus complex emotional expressions following sleep deprivation. *International Journal of Neuroscience*, 118(4), 487-502.

Grugle N.L. and Kleiner, B.M. (2007). Effects of chemical protective equipment on team process performance in small unit rescue operations. *Applied Ergonomics*, 38(5), 591-600.

Grugle, N.L. (2006). "Using Driving Simulators for Highway Safety Research." Presentation given at the Ohio Transportation Engineering Conference, Columbus, OH.

Grugle, N.L. (2005). Understanding the Effects of Sleep Deprivation on Executive Function, Complex Task Performance and Situation Awareness. Doctoral Dissertation.

Grugle, N.L., Kleiner, B.M., Wesensten, N.J. and Balkin, T.J. (2004). Refining the Walter Reed Sleep Management System: An Exemplar for Systems Improvement Using a Macroergonomic Approach. *Proceedings of the Human Factors and Ergonomics Society 48th Annual Meeting*, New Orleans, LA, 1620-24.

Grugle, N.L. (2001). An Investigation into the Effects of Chemical Protective Equipment on Team Process Performance during Small Unit Rescue Operations. Master's Thesis.

Panel and Webinar Participation

Halperin, J., Grugle, N., and Lewis, J. "Litigating Distracted and Fatigued Driving: Personal Injury, Commercial Transportation, and Insurance Defense Cases." Federal Bar Association. October 2025.

Grugle, N., Kemp, A., and Servais, M. "Motor Vehicle and Premises Liability Complexities Resulting From Low-Light Conditions." BARBRI. October 2025.

Grugle, N. and Brennan, J. "Proving the Negatives: Looming, Fatigue, and Driver Distraction." Trucking Industry Defense Association (TIDA). July 2025.

Grugle, N. and Lewis, J. "Fatigue and Drowsy Driving in the Trucking Industry." Defense Research Institute (DRI). April 2024.

Educational Session Panel. "This isn't NASCAR: Driving through orange barrels in Ohio." Ohio Safety Congress & Exposition. March 2007

Work Zone Safety Panel. Ohio Contractors Association Winter Conference. December 2006