



# CURRICULUM VITAE OF NANCY GRUGLE, PH.D., CHFP

Evidence Solutions, Inc. • [NGrugle@EvidenceSolutions.com](mailto:NGrugle@EvidenceSolutions.com)

## SPECIALTIES

Drowsy Driving, Distracted Driving, Looming, Driver Actions, Fatigue, Sleep Deprivation and Shift Work, Work Zone Safety, Product User-Interface Design, Premises Safety

## PROFESSIONAL EXPERIENCE

### Evidence Solutions, Inc.

2024 - Present

*Human Factors Expert Witness*

- Perform forensic investigations involving human factors
- Provide reports and testimony related to driver performance, sleep deprivation, fatigue and shift work, and premises safety

### Exigent Group Limited

2020 - 2023

*Human Factors Expert*

- 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, product user-interface design, product warnings and instructions, and premises safety

### Robson Forensic, Inc.

2013 - 2020

*Associate*

- Provided technical investigations, analysis, reports, and testimony toward the resolution of commercial and personal injury litigation involving human factors/ ergonomics
- Product and equipment user interface design
- Driver performance, distracted driving, drowsy driving, and work zone safety
- Sleep deprivation, fatigue, and shift work
- Premises safety
- Warning and instructional material design

### Lockheed Martin, Colorado Springs, CO

2007 - 2013

*Staff Human Factors Engineer*

- 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

### Cleveland State University, Cleveland, OH

2005 - 2007

*Assistant Professor, Industrial and Manufacturing Engineering*

- 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

### Walter Reed Army Institute of Research, Silver Spring, MD

2003 - 2005

*Co-Principal Investigator/Study Manager*

- Researched the effects of sleep deprivation on human performance, situation awareness and cognitive function.

Specialties

Professional Experience

Leadership Experience

Education

Professional  
Credentials

Publications and  
Presentations

Panel Participation



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## PROFESSIONAL EXPERIENCE cont.

- 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

### Lockheed Martin Systems Integration, Owego, NY

2001 – 2002

*Human Factors Engineer*

- 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

### Army Research Laboratory, Aberdeen Proving Ground, MD

2000

*Research Engineer*

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

## LEADERSHIP EXPERIENCE

### Cleveland State University, Cleveland OH

*Faculty Advisor, Institute of Industrial Engineers*

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

*Presidential Appointee, Patent Committee*

- 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*

- 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

### Human Factors and Ergonomics Society, Denver, CO

*Secretary, Rocky Mountain Chapter*

## EDUCATION

### Ph.D., Industrial and Systems Engineering (Human Factors)

2005

*Virginia Polytechnic Institute and State University*

### M.S., Industrial and Systems Engineering (Human Factors)

2001

*Virginia Polytechnic Institute and State University*

### B.S., Industrial and Systems Engineering

1999

*Ohio University*



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## PROFESSIONAL CREDENTIALS

- Certified Human Factors Professional (CHFP),  
Board of Certification in Professional Ergonomics

2016

## PUBLICATIONS AND PRESENTATIONS

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.

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.

### Specialties

### Professional Experience

### Leadership Experience

### Education

### Professional Credentials

### Publications and Presentations

### Panel Participation



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## PUBLICATIONS AND PRESENTATIONS cont.

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.

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**PUBLICATIONS AND PRESENTATIONS cont.**

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 PARTICIPATION**

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

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