

CURRICULUM VITAE OF

Michael Vredenburgh, M.S.

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www.Vantage-Forensics.com | 10/5/2026

Expert Profile

Core Areas of Expertise

Expert & Forensic Experience

Engineering & Product Development

Education

Technical Skills & Methodologies

Peer-Reviewed Publications

Affiliations & Awards

Rule 26 Testimony List

EXPERT PROFILE

Consulting expert specializing in Human Factors Engineering and Applied Biomechanics. Applies fundamental engineering, physics-based computational simulations, and validated human-performance metrics to evaluate human-system interactions, risk perception, perception-reaction times (PRT), and accident causation. Retained as a primary expert in more than 500 litigation matters, providing objective, evidence-based analyses for both plaintiff (approx. 50%) and defense (approx. 50%) counsel. Extensive background in transportation safety, premises liability, product design, and biomechanical injury simulation. Qualified to testify in state and federal courts with a record of 18 depositions and 3 trial testimonies over the past four years, with zero *Daubert* exclusions.

CORE AREAS OF EXPERTISE

- **Transportation Human Factors:** Perception-Reaction Time (PRT), Driver Fatigue & Drowsiness (PERCLOS methodology), “Looked But Failed To See” (LBFTS) Errors, Satisfaction of Search (SOS), Driver Expectancy, and Positive Guidance.
- **Applied Biomechanics & Kinematics:** Computational Biodynamic Impact Modeling (e.g., 1-DOF mass-spring-damper simulations), NIOSH Lumbar Compression Analysis, Injury Mechanism & Tolerance Evaluation, Occupant Kinematics, and Mechanical Decelerations.
- **Infrastructure & Safety Engineering:** Intersection Sight Distance (ISD) Analysis, Signal Phasing & Dilemma Zones, “See-Through Traps,” Heavy Machinery & Elevator Dynamics, and Premises/Work Zone Safety.



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- **Industry Standards & Regulatory Compliance:** Federal Highway Administration (FHWA) Safe System Approach, AASHTO Geometric Design Guidelines, NCHRP, MUTCD, FMCSA Commercial Driving Regulations, and ASME A17.1.

EXPERT WITNESS & FORENSIC EXPERIENCE

Vantage Forensics: Human Factors, Accident Reconstruction, & Biomechanics Inc.

Founder and Principal Consultant | 2026 – Present

- Directs forensic consulting operations and serves as the primary engineering expert in complex personal injury, product liability, and transportation litigation matters nationwide.
- Develops custom, physics-based computational simulations (using Python and MATLAB) to reconstruct vehicle kinematics, biodynamic forces, and environmental variables.
- Conducts quantitative visual analyses, including frame-by-frame PERCLOS coding and head-pose estimations from dashcam/bodycam footage to objectively evaluate commercial driver fatigue.
- Authors comprehensive, scientifically rigorous Rule 26 expert reports integrating human limitations with infrastructure and system demands to clarify complex scenarios for the trier of fact.

Vredenburgh & Zackowitz, Inc.

Industrial and Human Factors Engineer | 2016 – 2024

Systems and Research Analyst | 2010 – 2016

Early-Career Researcher & Forensic Assistant | 2006 – 2010

- Progressed from an early-career research role to a leading comprehensive engineering analyses in forensic investigations, serving as a primary retained expert.



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- Conducted nationwide site inspections evaluating driver reaction times, visibility restrictions, and compliance with safety standards.
- *Early Career Research:* Demonstrated exceptional early aptitude in human factors and biomechanics; conducted ADA wheelchair accessibility research, won 1st Place at the California State Science Fair, and successfully passed peer-review to publish as a primary author in the Human Factors and Ergonomics Society (HFES) prior to university matriculation.

ENGINEERING & PRODUCT DEVELOPMENT

Cherry Tomato Engineering, LLC.
Founder and CEO | 2022 – Present

- Directs R&D and prototyping for proprietary, patent-pending technical engineering systems built from first principles.
- Applies human-computer interaction (HCI) and physical ergonomics principles to optimize industrial safety.
- *Note: Operations and product specifics (including a novel, large-scale construction 3D printer) are currently maintained in confidential "stealth/R&D mode" to protect intellectual property and pending patents.*

EDUCATION

Wright State University

- **Ph.D. Candidate (ABD)**, Industrial and Human Factors Engineering *(Currently on academic leave to pursue commercial ventures)*
- **M.S.**, Industrial and Human Factors Engineering (2020)
- **Certificate:** User Experience (UX) and Design Thinking (2021)



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University of California, Berkeley

- **B.S.**, Bioengineering (Concentration: Computational Biology) (2016)

TECHNICAL SKILLS & METHODOLOGIES

- **Analysis & Simulation:** Computational biomechanical simulation (1-DOF standing models), kinematic physics engines, spatial geometry/sightline analysis, and PERCLOS psychophysiological metric analysis.
- **Software & Data:** Python (custom kinematic/biodynamic scripting, OpenCV), MATLAB (perception modeling), R, SPSS (statistical analysis of health/accident data), 3D Design/CAD.

PEER-REVIEWED PUBLICATIONS *(Last 10 Years)*

Vredenburgh, M.J., Stone, P.B., & Cao, C.G.L. (2021). User Experience: An evaluation of the Pilot Education Platform and Online Learning at Wright State University. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 65(1), 1215-1219.

Vredenburgh, A., & Vredenburgh, M. (2020). Human Factors Analysis of a Rotating Restaurant. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 64(1).

Borzendowski, S., Vredenburgh, M., Darlson, C., Hersh, M., Vredenburgh, A., & Zackowitz, I. (2019). Children's safety workshop: A demonstration of human factors professionals' preparation with practicing attorneys. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 63(1), 227.

Vredenburgh, M.J., Bench, M.L., Zackowitz, I.B., Runge, K., & Vredenburgh, A.G. (2018). Amusement Park Guest Injured on a Water Ride: A Human Factors and Biomechanics Evaluation. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, 62(1), 440-444.



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Bench, M.L., Vredenburgh, M.J., Zackowitz, I.B., & Vredenburgh, A.G. (2017). An epidemiological perspective of individual and population health risk prevention. In P. Arezes (Ed.), *Advances in Safety Management and Human Factors* (pp. 357-368). Springer.

Bench, M.L., Vredenburgh, M.J., Zackowitz, I.B., & Vredenburgh, A.G. (2017). Risk Communication for Consumer Products. In P. Arezes (Ed.), *Advances in Safety Management and Human Factors* (pp. 225-235). Springer.

Zackowitz, I.B., Vredenburgh, M.J., Bench, M.L., & Vredenburgh, A.G. (2017). Types of Consumer Products. In G. Emilien, R. Weitkunat, & M. Ludicke (Eds.), *Consumer Perception of Product Risks and Benefits* (pp. 3-22). Springer.

PRESENTATIONS & LECTURES

- *Human Factors Analysis of a Rotating Restaurant.* Human Factors and Ergonomics Society Annual Meeting (October 2020).
- *Children's safety workshop: A demonstration of human factors professionals' preparation with practicing attorneys.* Session Chair, Human Factors and Ergonomics Society Annual Meeting, Seattle, WA (October 2019).
- *Amusement Park Guest Injured on a Water Ride: A Human Factors and Biomechanics Evaluation.* Human Factors and Ergonomics Society Annual Meeting, Philadelphia, PA (October 2018).
- *Risk Communication for Consumer Products.* AHFE International Conference on Safety Management and Human Factors, Los Angeles, CA (July 2017).

PROFESSIONAL AFFILIATIONS & AWARDS

- **Human Factors & Ergonomics Society (HFES):** Elected Secretary/Treasurer, Forensics Professional Group (2020–2022).



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- **AHFE International Conference:** Technical Session Chair, "Risk Prevention and Assessment" (July 2017).
- **AngelHack SF (2015):** Top Prize Winner. Developed a machine learning-based email optimization system applying human-computer interaction (HCI) principles.
- **California State Science Fair:** First Place Award Winner for early-career engineering research.

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APPENDIX A: FEDERAL RULE 26 TESTIMONY HISTORY

Maintained pursuant to Federal Rule of Civil Procedure 26(a)(2)(B)(v). Includes depositions and trial testimony over the past four years.

1. ***Victoria Corner, et al. v. Port of Tacoma, et al.***
   - **Jurisdiction:** Superior Court of Washington, County of Pierce (Case No. 24-2-08416-4)
   - **Testimony:** Plaintiff Trial – October 5, 2026
   - **Testimony:** Plaintiff Deposition – March 31, 2026
2. ***Correa, et al. v. Kone, Inc., et al.***
   - **Jurisdiction:** Superior Court of California, County of San Diego (Case No. 37-2021-000433378-CU-PO-CTL)
   - **Testimony:** Plaintiff Video Deposition – September 21, 2026
3. ***Harry Herbert Surtees v. 3M Company, et al.***
   - **Jurisdiction:** Superior Court of California, County of Los Angeles (Case No. 23STCV10737)
   - **Testimony:** Plaintiff Deposition – September 11, 2026
4. ***Maria Magana, et al. v. James Construction Group, LLC, et al.***
   - **Jurisdiction:** District Court of Texas, 127th Judicial District, Harris County (Cause No. 2025-01822)
   - **Testimony:** Plaintiff Video Deposition – September 10, 2026
5. ***McClung v. Loews Miami Beach***
   - **Jurisdiction:** Circuit Court of Florida, County of Miami-Dade (Case No. 2024-012126-CA-01)
   - **Testimony:** Plaintiff Deposition – July 21, 2026
6. ***Calandrillo, et al. v. State of Washington, et al.***
   - **Jurisdiction:** Superior Court of Washington, County of Snohomish (Case No. 22-2-07240-31)
   - **Testimony:** Plaintiff Deposition – June 29, 2026



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7. ***Brenda Jewell Manter v. Jamie Palm, et al.***
   - **Jurisdiction:** Superior Court of California, County of Fresno (Case No. 24CECG00053)
   - **Testimony:** Defense Deposition – March 24, 2026
8. ***Richard Gardner v. Scripps Health***
   - **Jurisdiction:** Superior Court of California, County of San Diego (Case No. 37-2024-00011059-CU-PA-CTL)
   - **Testimony:** Plaintiff Deposition – March 2, 2026
9. ***Arcelia Elizarraraz v. County of Los Angeles***
   - **Jurisdiction:** Superior Court of California, County of Los Angeles (Case No. 24PSCV02623)
   - **Testimony:** Plaintiff Deposition – February 26, 2026
10. ***Good Samaritan Medical Center, Inc., et al. v. The Leapfrog Group***
    - **Jurisdiction:** U.S. District Court, Southern District of Florida (Case No. 9:25-cv-80526-DMM)
    - **Testimony:** Defense Deposition – September 30, 2025
11. ***Ignacio Velasquez, et al. v. Los Angeles County Metropolitan Transportation Authority, et al.***
    - **Jurisdiction:** Superior Court of California, County of Los Angeles (Case No. 21STCV24818)
    - **Testimony:** Plaintiff Deposition – August 2, 2024
12. ***Pamela Sarazen v. Costco Wholesale Corporation***
    - **Jurisdiction:** Superior Court of California, County of Santa Barbara (Case No. 21CV00852)
    - **Testimony:** Plaintiff Deposition – June 27, 2024
13. ***Daniel Torres and Sergio Gonzalez v. Kaila Jean Reyes Rivera, et al.***
    - **Jurisdiction:** Superior Court of California, County of Orange (Case No. 30-2021-01214322)
    - **Testimony:** Defense Trial – April 26, 2024
    - **Testimony:** Defense Deposition – March 29, 2024



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14. ***James Newman v. The City of San Diego***
    - **Jurisdiction:** Superior Court of California, County of San Diego (Case No. 37-2022-00006235-CU-PO-CTL)
    - **Testimony:** Plaintiff Deposition – February 1, 2024
15. ***Dee Allen Brannum v. City of Corcoran, County of Tulare, et al.***
    - **Jurisdiction:** Superior Court of California, County of Tulare (Case No. VCU290414)
    - **Testimony:** Plaintiff Trial – December 7, 2023
    - **Testimony:** Plaintiff Deposition – November 21, 2023
16. ***Fabian Sanchez v. Big 5 Corp.***
    - **Jurisdiction:** Superior Court of California, County of San Diego (Case No. 37-2020-00018007-CU-PO-CTL)
    - **Testimony:** Plaintiff Deposition – June 26, 2023
17. ***Alexander v. Ritchie Bros. Auctioneers (America) Inc.***
    - **Jurisdiction:** Superior Court of California, County of Riverside (Case No. CVR12000564)
    - **Testimony:** Defense Deposition – April 13, 2023
18. ***Damion Collins v. Overland Park Urban Air LLC, et al.***
    - **Jurisdiction:** U.S. District Court, District of Kansas (Case No. 2:2023mc00212) / American Arbitration Association (Case No. 01-22-0001-5781)
    - **Testimony:** Plaintiff Deposition – April 5, 2023