

LAUREN HUND, JD, PHD

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EDUCATION

University of New Mexico School of Law, JD	May 2024
Harvard University, PhD, Biostatistics	May 2012
Furman University, BA, Mathematics	May 2007

WORK EXPERIENCE

Andy Scholl Law, PC, Albuquerque, NM 2022-present
Associate Attorney
- Litigated complex medical malpractice and personal injury lawsuits at a two-attorney plaintiff's law firm.
- Engaged in all aspects of litigation, from case intake through trial.

Sandia National Laboratories, Albuquerque, NM 2015-2019
Principal Member of the Technical Staff in the Statistical Sciences Group

- Provided statistical consulting for scientists and engineers. Example collaborative projects:
 - Developed a lab-wide strategy for assessing reliability, risk, and uncertainty in component performance;
 - Drafted guidance for probabilistic analyses used in nuclear power plant safety certification; and
 - Quantified uncertainty in an artificial intelligence model used for target detection.
- Directed research projects pertaining to Sandia's technical missions. Tasks included:
 - Wrote competitive grant proposals to secure research funding; awarded five grants;
 - Assembled and directed a research team to execute the project plans, including mentoring students; and
 - Published research results in peer reviewed journals.

University of New Mexico, Albuquerque, NM 2013-2015
Assistant Professor of Biostatistics, Department of Family and Community Medicine

- Analyzed research data for peer-reviewed publications in collaboration with health science researchers;
- Researched statistical methods in survey design and causal inference;
- Drafted statistical analysis plans for competitive grant proposals; and
- Mentored public health graduate students conducting research projects.

Harvard School of Public Health, Boston, MA 2012
Postdoctoral Fellow and Graduate Research Assistant, Department of Biostatistics

- Researched statistical methods pertaining to causal inference, survey design, and spatial epidemiology.
- Consulted on public health research. Examples:
 - Drafted guidance about designing surveys for neonatal tetanus elimination for the World Health Organization;
 - Evaluated HIV incidence predictors at the Africa Centre in South Africa; and
 - Evaluated malaria incidence predictors at the Liverpool Tropical School of Medicine.

STATISTICAL FOCUS AREAS

- Focus areas include: biostatistics; engineering statistics; risk assessment; communication of statistical results; Bayesian statistics; causal inference.
- Extensive statistical consulting experience working with diverse professionals such as physicians, epidemiologists, psychologists, engineers, physicists, and policymakers.

TEACHING EXPERIENCE

Sandia National Laboratories

2015-2019

Course developer and instructor for:

- Modern statistics for engineers, an 18-hour statistics course covering advanced statistical inference.
- Introduction to Statistics, a 3-hour short course for engineers with no statistics background.
- Quantification of Margins and Uncertainties, a series of 2-hour short courses on risk assessment

University of New Mexico

2013-2015

- Course developer and instructor for Biostatistics I and Biostatistics II courses for Masters students.

Harvard University

2008-2012

- Harvard School of Public Health (2008-2012): Teaching Assistant for various different statistics courses.
- EdX/HarvardX (2012): Course developer and teaching assistant for Health in Numbers: Quantitative Methods in Clinical & Public Health Research, Harvard's second massive open online course offering.
- Summer School in Biostatistics and Epidemiology (2012): Course developer & lecturer for surveillance course.

PROFESSIONAL STATISTICS ACTIVITIES

- **Journal Referee:** Computational Material Science, Metrologia, Biometrics, Statistics in Medicine, Communications in Statistics, Emerging Themes in Epidemiology, Annals of Family Medicine, PLOS Neglected Tropical Diseases, Tropical Medicine and International Health, Health Policy and Planning.
- **Mentoring:** Mentored/advised 4 graduate student interns conducting research on my grants (2017-2020); mentored junior staff and graduate interns at Sandia labs and University of New Mexico.
- **Service:** Committee member for the Caucus for Women in Statistics, 2018-2019; Co-organizer of workshop on model calibration at UT-Austin (2018); secretary/treasurer of the ASA Albuquerque chapter, 2016-17; co-organizer of Albuquerque Chapter of the ASA Annual Meeting (2016-2017).

LAW SCHOOL ACTIVITIES

- **UNM Law School Dean Search Committee**, selected as only student member, Summer-Fall 2021
- **Curriculum Committee**, Fall-Spring 2021
- **Moms of Law Vice President**, Fall-Spring 2021
- **Rodey Law Firm Summer Clerk**, Summer 2021
- **ABA Appellate Moot Court Competition**, Spring 2021
- **Statistical consultant** for the UNM School of Pharmacy, Spring 2020-Spring 2021
- **ACLU externship**, volunteering on legislative proposal and civil rights litigation, Spring 2021
- **Summer Clerk**, at the Second Judicial District Attorney's Office, Summer 2020
- **Research assistant**, contributing to a study on domestic violence intentional torts, Spring 2020-present
- **Treasurer** for the Student Health Law Association, 2019-2020

HONORS AND AWARDS

Law school:

- Daniels Diploma: awarded to the student awarded to the student who graduates first in her class, May 2022
- Frederick M. Hart Prize in Commercial Law, May 2022
- Salazar Prize for highest GPA, August 2021
- High section grade in: Torts I & II, Legal Writing I & II, Civil Procedure I & II, Property, Constitutional Law, Evidence, Administrative Law, Role of Corporations in Society, Lab, Sales of Goods, Conflicts of Law

Statistics:

- National Nuclear Security Administration Team Project Award, 2019
- Certificate of Distinction in Teaching, Harvard School of Public Health, 2011
- APHA Statistics Section Student Paper Competition, 2011
- National Defense Science and Engineering Graduate Fellowship, 2007

PAPERS

Published Articles

- Lowe, J., **Hund, L.**, et. al. (2021). Maternal verbal scaffolding: association with higher language skills for 20-month old children with perinatal substance exposure. *Journal of Human Development*, 160.
- Bakhireva, L., Sparks, A., Herman, M., **Hund, L.**, et. al. Severity of Neonatal Opioid Withdrawal Syndrome with Prenatal Exposure to Serotonin Reuptake Inhibitors. *Pediatric Research* (accepted).
- Rumsey K., Huerta G., Brown J, and **Hund L.** (2020). Dealing with measurement uncertainties as nuisance parameters in Bayesian model calibration. *SIAM/ASA Journal on Uncertainty Quantification* 8(4): 1287-1309.
- **Hund, L.** and Schroeder, B. (2019) A causal perspective on reliability assessment. *Reliability Engineering and System Safety*.
- **Hund L.** and Schroeder B. (2018). Distinguishing between model-and data-driven inferences for high reliability statistical predictions. *Reliability Engineering and System Safety*.
- Brown J. and **Hund L.** (2018) Bayesian model calibration of computational models in velocimetry diagnosed dynamic compression experiments. *Journal of the Royal Statistical Society Series C*.
- Brown S., Hall R., **Hund L.**, Gutierrez H.L., Hurley T., Bakhireva L (2016). Assessment of Fetal Frontal Lobe Biometry by Three-Dimensional Ultrasound. *Journal of Perinatal and Prenatal Epidemiology*.
- Bedrick E. and **Hund L.** (2016). An Approach for Quantifying Small Effects in Regression Models. *Statistical Methods in Medical Research*.
- Jacobson H., **Hund L.**, Sotomas F (2016). Predictors of English Health Literacy among US Hispanic immigrants. *Literacy and Numeracy Studies* 24(1), 43-65.
- Cook L., Jackson S., Murrietta A., Tollestrup K., Cordova C., **Hund L.**, and Tollestrup K. (2016). Rural Community Viewpoint on Long-Term Research Participation Within a Uranium Mining Legacy (Grants Mining District, New Mexico). *Journal of Environmental Health*.
- Gutierrez H., **Hund L.**, S Shrestha, Rayburn W., Leeman L., Savage D., Bakhireva L. (2015). Ethylglucuronide in maternal hair as a biomarker of prenatal alcohol exposure. *Alcohol* 49 (6), 617-623.
- Handal A., **Hund L.**, Páez M., Bear S, Greenberg C., Fenske R., Barr D. (2015). Characterization of Pesticide Exposure in a Sample of Pregnant Women in Ecuador. *Archives of Environmental Contamination and Toxicology*, 1-13.
- **Hund L.**, Getrich C. (2015). Evaluating the use of short computing video tutorials to enhance graduate biostatistics learning. *Journal of Statistics Education* 23 (2).
- **Hund L.**, Bedrick E., Pagano M. (2015). Choosing a cluster sampling design for lot quality assurance sampling surveys. *PloS ONE* 10(6).
- **Hund L.**, Bedrick E., Miller C., Nez T., Ramone C., Shuey C., Lewis J (2015). A Bayesian framework for estimating disease risk due to exposure to uranium mine and mill waste on the Navajo Nation. *Journal of the Royal Statistics Society: Series A* 178:4.
- **Hund L.**, Pagano M. (2014) Extending LQAS cluster survey designs for nutrition surveillance programs. *Statistics in Medicine* 33:16, Pages 2746-2757, PMC3931287.
- **Hund, L.** (2014). New tools for evaluating LQAS survey designs. *Emerging Themes in Epidemiology* 11:2.
- **Hund L.**, Northrop-Clewes C, Nazario R.F., Suleymanova D., Mirzoyan L., Irisova M., Pagano M., Valadez J. (2013). A Novel Approach to Evaluating the Iron and Folate Status of Women of Reproductive Age in Uzbekistan after 3 years of Flour Fortification with Micronutrients. *PLOS ONE*. doi: 10.1371.
- Hedt B., Mitsunaga T., **Hund L.**, Olives C., Pagano M (2013). The effect of clustering on Lot Quality Assurance Sampling: a probabilistic model to calculate sample sizes for quality assessments. *Emerging Themes in Epidemiology*. doi 10.1186/1742-7622-10-11.
- **Hund L.**, Pagano M. (2013) Estimating prevalence when individual consent rates are low: Improving bias using a pooled testing option. *Emerging Themes in Epidemiology* 10:2. doi 10.1186/1742-7622-10-2.

- **Hund L.**, Chen J.T., Krieger N., Coull B. A. (2012) Geostatistical approach to large-scale disease mapping with temporal misalignment. *Biometrics* 66:3, Pages 849-858. PMC4104681,
- Tanser F., Bärnighausen T., **Hund L.**, Garnett G., McGrath N., Newell M.L. (2011). Effect of concurrent sexual partnerships on rate of new HIV infections in a high-prevalence, rural South African population: a cohort study. *The Lancet* 378:9787, Pages 247 - 255.

Technical Reports

- Martin, N., **Hund, L.**, et al. (2020). Probabilistic fracture mechanics pilot study. SAND report for Nuclear Regulatory Commission.
- Rodriguez, K., **Hund, L.**, et al. (2017). Uncertainty quantification for reliability: Pilot Project Results. Technical SAND report for Sandia National Laboratories.
- **Hund L.**, Rodriguez K, Rumsey K, et. al (2017). Handbook of statistical methodologies for quantification of margins and uncertainties. Technical SAND report for Sandia National Laboratories.
- **Hund L.**, Miller L, Arp S, et. al (2017). Handbook of QMU Methodologies: Overview and Processes. Technical SAND report for Sandia National Laboratories.
- **Hund L.**, Schroeder B, Rumsey K, Murchison N (2017). Robust Approaches to Quantification of Margin and Uncertainty for Sparse Data. Technical SAND report for Sandia National Laboratories.
- Martin N, Lewis J, **Hund L.** (2017). xLPR Post-Processing Documentation. Technical SAND report for Sandia National Laboratories.
- Eckert-Gallup A, Lewis J, Martin N, **Hund L.**, Clark A, Brooks D, Mariner P. (2017) xLPR Scenario Analysis Report. Technical SAND report for Sandia National Laboratories.
- **Hund L.**, Campbell, D., and Newcomer J. (2017). Statistical Guidance for Setting Product Specification Limits. RAMS 2017 Conference Proceedings.
- **Hund L.** and Brown, J. (2016) Statistically Rigorous Uncertainty Quantification for Physical Parameter Model Calibration with Functional Output. Technical SAND report for Sandia National Laboratories.
- **Hund L.**, Campbell, D., and Newcomer J. (2016) A margin-based approach to setting product specification limits. Technical SAND report for Sandia National Laboratories.
- Phinney L., Safta C., **Hund L.**, Brunini V., Garcia R., Keedy R., Hough P. (2016) PMDI Polyurethane Foam Thermal Conductivity. Technical SAND Report for Sandia National Laboratories.
- Dorado A., Bode M., **Hund L.** (2016). Transport airplane hydraulic fuse functional reliability study. Technical Report for the Federal Aviation Administration.
- Clewes C., **Hund L.**, Valadez J., Mirzoyan L., Irisova M. (2012) Survey report for Uzbekistan Ministry of Health National Flour Fortification Program.
- **Hund, L.** and Pagano M. (2012) Revised survey protocol for neonatal tetanus elimination surveys. (Technical Report for the World Health Organization).

INVITED TALKS AND SEMINARS

- International Conference on Systems Dynamics, “Invited panel on causal inference,” July 2019.
- New Ideas Research Forum, Sandia National Laboratories, “Using causal models to analyze imperfect data”, March 2019.
- Joint Statistical Meetings Topic Contributed Session, “A geometric approach for calibrating computer models with misaligned functional output,” August 2018.
- Joint Research Conference on Statistics in Quality, Industry, and Technology, “Overfitting in Bayesian model calibration with functional outputs under misspecified models,” June 2018.
- Sandia Verification and Validation Colloquium, “Recommended statistical methodologies for quantification of margins and uncertainties,” January 2017.
- University of New Mexico Medical Campus, “Methods for Causal Inference: A primer on causal methods in public health research,” November 2017.
- Women in Statistics, “Practical challenges of statistical leadership for early-career statisticians,” October 2017.
- University of Texas Decision Science and Operation Research Colloquium, “Impacts of model uncertainty in data-driven decision-making at Sandia National Laboratories,” October 2017.

- University of New Mexico Statistics Colloquium, “Calibrating material properties with functional output using Bayesian model calibration,” October 2016.
- Population Association of America Annual Meeting, “The impact of denominator uncertainty in spatial ecological regression models,” May 2014.

COMPETITIVE GRANT FUNDING AS PRINCIPAL INVESTIGATOR

- Sandia Lab-directed research and development 10/17-10/19
 “Statistical uncertainty quantification for multivariate physical parameter estimation with multivariate outputs”
- Goal: develop new methods for Bayesian model calibration for physical parameter estimation when outputs are functional, and models are misspecified; includes collaboration with UT Austin.
- Sandia Lab-directed research and development 10/17-10/19
 “A unified framework for quantification of margin and uncertainty”
- Goal: consider statistical data integration and model credibility metrics for quantifying margin and uncertainty in engineering reliability applications; includes collaboration with UT Austin.
- Sandia Lab-directed research and development 3/17-10/17
 “Increasing yield of actionable information from observational human subjects studies”
- Goal: determine whether causal statistical analyses increase the volume of actionable information extracted from human subjects datasets in national security applications.
- Sandia Lab-directed research and development 10/16-3/17
 “Robust tolerance interval estimation”
- Goal: develop new statistical methods to improve quantification of margin and communication of uncertainty using experimental data.
- Sandia Lab-directed research and development 3/16-9/16
 “Physical Parameter Model Calibration with Functional Output”
- Goal: develop a novel Bayesian model calibration procedure to improve uncertainty quantification for physical parameter estimation, with applications to estimating dynamic material properties from high-pressure experiments.
- UNM Internal Grant, Research Allocation Committee 11/13-10/14
 “Pesticide exposure trends in pregnant flower workers”
- Goal: quantify temporal trends and predictors of pesticide levels in urine measurements from pregnant flower workers in Ecuador.
- UNM Internal Grant, Teacher and Educational Development 09/13-08/15
 “Comparing traditional and hybrid learning in graduate biostatistics using a case-crossover mixed-methods study”
- Goal: pilot test a hybrid learning model for biostatistics in a small public health program.

SELECT CONFERENCE PRESENTATIONS AND POSTERS

- **Hund, L.** and Schroeder, B. A causal perspective on reliability assessment, DATAWorks 2019.
- Schroeder, B., **Hund, L.** and Kittinger, R. The Need for Credibility Guidance for Analyses Quantifying Margin and Uncertainty. IMAC XXXVII 2019.
- Ries, D., Smith, B., Zollweg, J. and **Hund, L.** Using Bayesian Neural Networks for UQ of Hyperspectral Image Target Detection. DATAWorks 2019.
- King, C. and **Hund, L.** Model credibility in statistical reliability analysis with limited data. DATAWorks 2018.
- Brown, J. and **Hund, L.** Bayesian model calibration of ramp compression experiments on Z. APS Topical Meeting, Shock Compression of Condensed Matter, 2017.
- Mullins J., Schroeder B., **Hund L.**, and Lewis J. Practical Challenges and Recommendations for Calibration, Validation, and Prediction under Uncertainty. ASME Verification and Validation Symposium 2017.