Adam L. Pintar

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Education

- **Ph.D. in Statistics**
  Iowa State University, Ames, IA, December, 2010
  - Dissertation Title: Model Selection for Good Estimation or Prediction Over a User-Specified Covariate Distribution
- **M.S. in Statistics**
  Iowa State University, Ames, IA, May, 2007
  - Project Title: Ordering the Works of Plato
- **M.S. in Mathematics**
  Pittsburg State University, Pittsburg, KS, December 2004
  - Project Title: Accelerated life Testing Assuming Exponential Distributions
- **B.S. in Mathematics**; minor in Computing
  Pittsburg State University, Pittsburg, KS, May, 2003

Research Interests

- Model Selection
- Bayesian Methods
- Experiment Design
- Statistical Computing
- Measurement Uncertainty
- Environmental Statistics
- Machine Learning

Professional Experience

- **Statistical Engineering Division, National Institute of Standards & Technology (NIST)**, Gaithersburg, MD
  - *2010 - present* Mathematical Statistician
- **Department of Statistics, Iowa State University**, Ames, IA
  - *Spring 08, Fall 08, Spring 09, Fall 09, and Spring 10* Statistical Consultant (the Agriculture Experiment Station and the College of Engineering)
- **Statistical Sciences Group, Los Alamos National Laboratory**, Los Alamos, NM
  - *Summer 09* Student Intern
  - *Summer 08* Student Guest Scholar
- **Statistics in the Community**, Ames, IA
  - *August 07 - September 10* pro bono statistical consulting

Honors & Awards

- Department of Commerce Gears of Government Award, NIST, Gaithersburg, MD, 2019, for developing new maps of wind speeds for the US.
- Department of Commerce Gold Medal, NIST, Gaithersburg, MD, 2018, for developing new maps of wind speeds for the US.
- Materials Measurement Laboratory Accolade for technology transfer, NIST, Gaithersburg, MD, 2015.
- Dan Mowrey Consulting Excellence Award, Department of Statistics, Iowa State University, Ames, IA, 2010.
- Fall Technical Conference Student Grant, Fall Technical Conference, Indianapolis, IN, 2009.
- Mary G. & Joseph Natrella Scholarship, Quality and Productivity Research Conference, Yorktown Heights, NY, 2009.

- Holly C. & E. Beth Fryer Award in Statistics, Department of Statistics, Iowa State University, Ames, IA, 2007.
- Research Training Group Fellowship, Department of Statistics, Iowa State University, Ames, IA, 2007 – 2009.
- Vertical Integration of Research and Education (VIGRE) Fellowship, Department of Statistics, Iowa State University, Ames, IA, 2006 – 2007.
- Excellence in Research Award, Department of Mathematics, Pittsburg State University, Pittsburg, KS, 2005.

Publications

Refereed Journal Articles

- Elliott, L.C., **Pintar, A.L.**, Copeland, C.R., Renegar, T.B., Dixson, R.G., Ilic, B.R., Verkouteren, R.M., and Stavis, S.M., (2022) Sub-picoliter Traceability of Microdroplet Gravimetry and Microscopy. *Analytical Chemistry*, **94(2)** https://doi.org/10.1021/acs.analchem.1c02640.
- Nandi T.N., **Pintar A.L.**, and Simiu, E., (2022) Influence of Surface Roughness Uncertainties on Design of Structures with Open and Suburban Exposures. *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*, **8(1)**, https://doi.org/10.1061/AJRUA6.0001191.
- Weaver, J.S., **Pintar, A.L.**, Beauchamp, C., Joress, H., Moon, K.W., & Phan, T.Q., (2021) Demonstration of a laser powder bed fusion combinatorial sample for high-throughput microstructure and indentation characterization. *Materials & Design*, **209**, https://doi.org/10.1016/j.matdes.2021.109969.
- Chao, Z., **Pintar, A.L.**, Weigand, J., Main, J.A., and Sadek, F., (2021) Impact of Variability in Thermal Properties of SFRM on Steel Temperatures in Fire. *Fire Safety Journal*, **123**, https://doi.org/10.1016/j.firesaf.2021.103361.
- Kim, F.H., **Pintar, A.L.**, Obaton, A-F., Fox, J., Tarr, J., and Donmez, A., (2021) Merging experiments and computer simulations in X-ray Computed Tomography probability of detection analysis of additive manufacturing flaws. *NDT & E International*, **119**, 102416 https://doi.org/10.1016/j.ndteint.2021.102416.
- Fox, J.C. and **Pintar, A.L.**, (2021) Prediction of Extreme Value Areal Parameters in Laser Powder Bed Fusion of Nickel Superalloy 625. *Surface Topography: Metrology and Properties*, **9**, https://doi.org/10.1088/2051-672X/ac0061.
- Stoudt, S., **Pintar, A.L.**, and Possolo, A., (2021) Coverage Intervals. *Journal of Research of NIST*, **126**, https://doi.org/10.6028/jres.126.004.
- Stoudt, S., **Pintar, A.L.**, and Possolo, A. (2021) Uncertainty Evaluations from Small Datasets. *Metrologia*, **58**, https://doi.org/10.1088/1681-

7575/abd372.

- Jiang, J. **Pintar, A.L.**, Weigand, J.M., Main, J.A., and Sadek, F., (2019) Improved calculation method for insulation-based fire resistance of composite slabs. *Fire Safety Journal*, **105**, 144–153, https://doi.org/10.1016/j.firesaf.2019.02.013.
- Kim, F.H., **Pintar, A.L.**, Moylan, S.P., and Garboczi, E.J., (2019) The Influence of X-ray Computed Tomography Acquisition Parameters on Image Quality and Probability of Detection of Additive Manufacturing Defects. *Journal of Manufacturing Science and Engineering*, **141(11)**, https://doi.org/10.1115/1.4044515.
- Levine, Z.H., Blattner, T.J., Peskin, A.P., and **Pintar, A.L.**, (2019) Scatter corrections in x-ray computed tomography: a physics-based analysis. *J. Res. NIST*, **124**, https://doi.org/10.6028/jres.124.013.
- Duthinh, D., **Pintar, A.L.**, and Simiu, E., (2018) Influence of wind tunnel test duration on wind load factors. *ASCE Journal of Structural Engineering*, **44(11)**, https://doi.org/10.1061/(ASCE)ST.1943-541X.0002202.
- Levine, Z.H., Streater, R.H., Lieberson, A-M.R., **Pintar, A.L.**, Cooksey, C.C., and Lemaillet, P., (2017) Algorithm for Rapid Determination of Optical Scattering Parameters. *Optics Express*, **25**, 26728 – 26746, https://doi.org/10.1364/OE.25.026728.
- Streater, R.H., Lieberson, A-M.R., **Pintar, A.L.**, and Levine, Z.H., (2017) MCMLpar and MCSLinv: A Parallel Version of MCML and Inverse Monte Carlo Algorithm to Calculate Optical Scattering Parameters. *Journal of Research of the National Institute of Standards and Technology*, **122** https://doi.org/10.6028/jres.122.038.
- Levine, Z.H., Chen-Mayer, H.H., Peskin, A.P., and **Pintar, A.L.** (2017) Comparison of One-Dimensional and Volumetric Computed Tomography Measurements of Injected-Water Phantoms. *Journal of Research NIST*, **122**, https://doi.org/10.6028/jres.122.036.
- Duthinh, D. **Pintar, A.L.**, Simiu, E., (2017) Estimating Peaks of Stationary Random Processes: A Peaks-over-threshold Approach. *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*, **3(4)**, https://doi.org/10.1016/j.firesaf.2021.103361.
- Possolo, A. and **Pintar, A.L.**, (2017) Plurality of Type A Evaluations of Uncertainty. *Metrologia*, **54**, 617–632.
- Pérez, D.L., Baker, P.J., **Pintar, A.L.**, Sun, J., Lin, N.J., and Lin-Gibson, S., (2017) Experimental and Statistical Methods to Evaluate Antibacterial Activity of a Quaternary Pyridinium Salt on Planktonic, Biofilm-forming, and Biofilm States. *Biofouling*, **33**, 222–234.
- Simiu, E., **Pintar, A.L.**, Duthinh, D. and Yeo D., (2017) Wind Load Factors for use in the Wind Tunnel Procedure. *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering*, **3(4)** https://doi.org/10.1061/AJRUA6.0000910.
- Schantz, M.M., Cleveland, D., Heckert, N.A., Kucklick, J.R., Leigh, S.D., Long, S.E., Lynch, J.M., Murphy, K.E., Olfaz, R., **Pintar, A.L.**, Porter, B.J., Rabb, S.A., Vander-Pol, S.S., Wise, S.A., and Zeisler R., (2016)

Development of Two Fine Particulate Matter Standard Reference Materials ($<4\mu$m and $<10\mu$m) for the Determination of Organic and Inorganic Constituents. *Journal of Analytical and Bioanalytical Chemistry*, **408**, 4257–4266.

- Levine, Z.H., **Pintar, A.L.**, Dobler, J.T., Blume, N., Braun, M., Zaccheo, T.S., and Pernini, T.G., (2016) The Detection of Carbon Dioxide Leaks using Quasi-tomographic Laser Absorption Spectroscopy Measurements in Variable Wind. *Atmospheric Measurement Techniques*, **9**, 1627–1636 https://www.atmos-meas-tech.net/9/1627/2016/amt-9-1627-2016.pdf.
- Levine, Z.H. and **Pintar, A.L.**, (2015) A Fixed-memory Moving, Expanding Window for Obtaining Scatter Corrections in X-Ray CT and Other Stochastic Averages. *Computer Physics Communications*, **196**, 455–459.
- Levine, Z.H., Glebov, B.L., **Pintar, A. L.**, and Migdall, A.L., (2015) Absolute calibration of a variable attenuator using few-photon pulses, *Opt. Express*, **23**, 16372 – 16382.
- Zhang, N.F., and **Pintar, A.L.**, (2015) Monitoring Process Variability for Stationary Process Data. *Quality and Reliability Engineering International*, **31(8)**, 1383–1396, https://doi.org/10.1002/qre.1672.
- Schantz, M.M., Eppe, G., Focant, J-F., Hamilton, C., Heckert, N.A. Heltsley, R.M., Hoover, D., Keller, J.M., Leigh, S.D., Patterson Jr., D.G., **Pintar, A.L.**, Sharpless, K.E., Sjödin, A., Turner, W.E., Vander-Pol, S.S., and Wise, S. A., (2013) Milk and serum standard reference materials for monitoring organic contaminants in human samples. *Analytical and bioanalytical chemistry*, **405**, 1203 – 1211.
- **Pintar, A.L.**, Anderson-Cook, C.M., Wu, H., (2013) Prediction-based Model Selection for Bayesian Multiple Regression Models. *Advances and Applications in Statistics*, **32**, 83 – 117.
- Levine, Z.H., **Pintar, A.L.**, Hagedorn, J.G., Fenimore, C.P., and Heussel, C.P., (2012) Uncertainties in RECIST as a measure of volume for lung nodules and liver tumors. *Medical physics*, **39**, 2628 – 2637.
- **Pintar, A.L.**, Anderson-Cook, C.M., and Wu, H., (2012) Model Selection for Good Estimation and Prediction over a User-Specified Covariate Distribution for Linear Models under the Frequentist Paradigm. *Quality and Reliability Engineering International*, **28**, 767 – 782.
- Robinson, T.J., **Pintar, A.L.**, Anderson-Cook, C.M., and Hamada, M.S., (2012) A Bayesian Approach to the Analysis of Split-Plot Combined and Product Arrays and Optimization in Robust Parameter Design. *Journal of Quality Technology*, **44**, 304 – 320.
- **Pintar, A.L.**, Lu, L., Anderson-Cook, C.M., and Silver, G.L., (2012) Bayesian estimation of reliability for batches of high reliability single-use parts. *Quality Engineering*, **24**, 473 – 485.
- White, C.C., Hunston, D.L., Tan, K.T., Filliben, J.J., **Pintar, A.L.**, and Schueneman, G., (2012) A Systematic Approach to the Study of Accelerated Weathering of Building Joint Sealants. *Journal of ASTM International*, **9**.
- Patterson, A.R., Baker, R.B., Madson, D. M., **Pintar, A.L.**, and Opriess-

nig, T., (2011) Disinfection protocols reduce the amount of porcine circovirus type 2 in contaminated 1: 61 scale model livestock transport vehicles. *Journal of Swine Health and Production*, **19**, 156 – 164.

- Hobbs, J., Fostvedt, L., **Pintar, A.L.**, Rockoff, D., Kim, E., and Griffiths, R., (2010) Fixed-cost vs. Fixed-risk post-election audits in Iowa. *Chance*, **23**, 13 – 17.

Refereed Book Chapters

- **Pintar, A.L.**, White, C., and Sung, L., (2020) Bayesian Hierarchical Models for Service Life Prediction or Polymers in *Service Life Prediction of Polymers and Coatings*, eds. C. C. White, M. E. Nichols, and J. E. Pickett, William Andrew Publishing, 209-231, https://doi.org/10.1016/B978-0-12-818367-0.00011-4.
- **Pintar, A.L.**, White, C.C., Hunston, D., and Filliben, J.J., (2017) Predicting Field Degradation of Sealants Using Accelerated Tests for the NIST Solar Sphere in *Service Life Prediction of Polymers and Plastics Exposed to Outdoor Weathering*, eds. C. C. White, K. M. White, and J. E. Pickett, Elsevier, Cambridge, MA, ISBN 9780323497763.
- **Pintar, A.L.**, and Lombardo, F.T., (2013) Mapping Return Values of Extreme Wind Speeds in *Risk Assessment and Evaluation of Predictions*, eds. Ting, M-L., Gail, M., Pfeiffer, R., Satten, G., Cai, T., and Gandy, A., Springer, New York, NY.

Technical Reports

- Weigand, J.M., Sadek, F., Thonstad, T., Marcu, S., Villegas, R., Phan, L.T., and **Pintar, A.L.**, (2022) Structural Performance of Nuclear Power Plant Concrete Structures Affected by Alkali-Silica Reaction (ASR) Task 3: Assessing Cyclic Performance of ASR-Affected Concrete Shear Walls. *NIST Technical Note 2180* https://doi.org/10.6028/NIST.TN.2180.
- Bose, R., **Pintar, A.L.**, and Simiu, E. (2021) Forecasting the Evolution of North Atlantic Hurricanes: A Deep Learning Approach. *NIST Technical Note 2167*, https://doi.org/10.6028/NIST.TN.2167.
- Thonstad, T., Weigand, J.M., Sadek, F., Marcu, S., Barrett, T.J., Lew, H.S., Phan, L.T., and **Pintar, A.L.**, (2021) Structural Performance of Nuclear PowerPlant Concrete Structures Affected by Alkali-Silica Reaction (ASR) Task 2: Assessing Bond and Anchorage of Reinforcing Bars in ASR-Affected Concrete. *NIST Technical Note 2127* https://doi.org/10.6028/NIST.TN.2127.
- Sadek, F., Thonstad, T., Marcu, S., Weigand, J.M., Barrett, T.J., Lew, H.S., Phan, L.T., and **Pintar, A.L.**, (2021) Structural Performance of Nuclear PowerPlant Concrete Structures Affected by Alkali-Silica Reaction (ASR) Task 1: Assessing In-Situ Mechanical Properties of ASR-Affected Concrete. *NIST Technical Note 2121* https://doi.org/10.6028/NIST.TN.2121

- **Pintar, A.L.**, Simiu, E., Lombardo, F.T., and Levitan, M., (2015) Maps of Non-tornadic Wind Speeds With Specified Mean Recurrence Intervals for the Contiguous United States Using a Two-dimensional Poisson Process Extreme Value Model and Local Regression. *NIST Special Publication 500-301*, http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.500-301.pdf
- Zarr, R.R., and **Pintar, A.L.**, (2012) SRM 1453, ExpandedM. Polystyrene Board, for Thermal Conductivity from 281 K to 313 K. *NIST Special Publication 260-175*, https://www.nist.gov/sites/default/files/documents/srm/SP260-175-2.pdf.

Unrefereed Book Chapters

- Lombardo, F.T., **Pintar, A.L.**, Possolo, A., Simiu, E., and Yeo, D., (2013) Meteorological Extremes. *Encyclopedia of Environmetrics*, **4**.

Unrefereed Conference Proceedings

- Lemaillet, P., Cooksey, C.C., Levine, Z.H., **Pintar, A.L.**, Hwang, J., and Allen, D.W., (2016) National Institute of Standards and Technology measurement service of the optical properties of biomedical phantoms: current status. *Proc. SPIE 9700, Design and Quality for Biomedical Technologies IX, 970002* doi:10.1117/12.2214569.
- Zhang, N.F., and **Pintar, A.L.**, (2014) SPC Charts for Detecting Shifts in Variance with Autocorrelated Data, American Statistical Association, 2013, Proceedings of the Joint Statistical Meetings, Section on Quality and Productivity, 467 - 476.
- Levine, Z.H., Chen-Mayer, H.H., **Pintar, A.L.**, and Sawyer, D.S., (2013) Standard Reference Materials for Medical CT. *Imaging and Applied Optics*, OSA Technical Digest (online) (Optical Society of America), paper QW1G.3. http://www.opticsinfobase.org/abstract.cfm?URI=QMI-2013-QW1G.3.
- **Pintar, A.L.**, Possolo, A., and Zhang, N.F., (2013) Statistical Methods for Change-point Detection in Surface Temperature Records. *TEMPERATURE: ITS MEASUREMENT AND CONTROL IN SCIENCE AND INDUSTRY, VOLUME 8: Proceedings of the Ninth International Temperature Symposium*, **1552**, AIP Publishing.
- **Pintar, A.L.**, Possolo, A., and Zhang, N.F., (2013) Regional Homogenization of Surface Temperature Records Using Robust Statistical Methods. *TEMPERATURE: ITS MEASUREMENT AND CONTROL IN SCIENCE AND INDUSTRY, VOLUME 8: Proceedings of the Ninth International Temperature Symposium*, **1552**, AIP Publishing.
- **Pintar, A.L.** and Jayawardhana, A.A., (2006) A Simulation Study to Test the Accuracy of Using Maximum Likelihood Predictive Density in Quality Control Assuming the Power Rule Model and the Exponential Distribution, American Statistical Association, 2005, Proceedings of the

Joint Statistical Meetings, Section on Quality and Productivity, 1848 - 1853.

Statistics Digest: The Newsletter of the ASQ Statistics Division

- **Pintar, A.L.**, (Feb. 2016) Message from the Past Chair of the ASQ Statistics Division: Bias Corrected and Accelerated Bootstrap Confidence Intervals.
- **Pintar, A.L.**, (Oct. 2015) Message from the Chair of the ASQ Statistics Division.
- **Pintar, A.L.**, (June 2015) Message from the Chair of the ASQ Statistics Division.
- **Pintar, A.L.**, (Feb. 2015) Message from the Chair of the ASQ Statistics Division.

Blog Posts

- **Pintar, A.L.**, One Statistical Paradigm to Rule Them All?, https://www.nist.gov/blogs/taking-measure/one-statistical-paradigm-rule-them-all

Presentations

Invited

- **Pintar, A.L.**, Statistical Engineering for Service Life Prediction of Polymers, 2020 DATAWorks conference, virtual, May 1, 2020.
- **Pintar, A.L.**, Threshold Averaging With Peaks Over Threshold Extreme Value Models for Wind Tunnel Tests, Mathematics Department seminar, University of Maryland, College Park, MD, November 14, 2019.
- **Pintar, A.L.** White, C.C, Hunston, D.L., and Filliben, J.J, Hierarchical Bayesian Models for Sealant Data from the NIST Solar Sphere, Service Life Prediction of Polymeric Materials: Reaching New Heights, Boulder, CO, March 22, 2018.
- **Pintar, A.L.**, Statistical Model Uncertainty in Measurements: Three Examples, Fall Technical Conference, Philadelphia, PA, October 5, 2017.
- **Pintar, A.L.**, Duthinh, D., and Simiu, E., Estimating the Distribution of an Extremum Using a Peaks-over-threshold Model and Monte Carlo Simulation, 2017 Test Science Workshop, Springfield, VA, April 5, 2017.
- **Pintar, A.L.**, Duthinh, D., and Simiu, E., Estimating the Distribution of the Peak Pressure Exerted on a Scale Model of a Structure in a Wind Tunnel, 2016 Fall Technical Conference, Minneapolis, MN, October 6, 2016.
- **Pintar, A.L.** Statistics at the National Institute of Standards and Technology, Second Congreso Internacional de Calidad y Estadistica Aplicada (CICEA-II), Lima, Peru, July 22, 2016.

- **Pintar, A.L.** Bayesian Adaptive Design for Conformance Testing with Bernoulli Trials, Rigorous Test and Evaluation for Defense, Aerospace, and National Security Workshop on, Crystal City, VA, April 13, 2016.
- **Pintar, A.L.** White, C., and Hunston, D., Predicting Field Degradation of Sealants Using Accelerated Tests from the NIST Solar Sphere, Service Live Prediction of Polymeric Materials Conference, Santa Fe, NM, March 24, 2016.
- **Pintar, A.L.**, Lopez-Pérez, D., and Lin, N., Estimating Properties of Antimicrobial Agents Using Statistical Techniques for Data that are Interval Censored and Correlated, 2015 Fall Technical Conference, Houston, TX, October 8, 2015.
- **Pintar, A.L.** and Simiu, E., Development of Extreme Non-hurricane Wind Speed Maps for Structural Design from Meteorological Station Measurements in the Contiguous United States, 2014 Fall Technical Conference, Richmond, VA, October 3, 2014.
- **Pintar, A.L.** and Simiu, E., A Two Stage Approach to Mapping Extreme Non-hurricane Wind Speed over the Contiguous United States, European network of business and industrial statisticians conference, Linz, Austria, September 23, 2014.
- **Pintar, A.L.** and Wang, D., Errors in Variables and Ridge Regression for Structural Data from Synthesized Amorphous Calcium Phosphate, the Joint Research Conference, Seattle, WA, June 26, 2014.
- **Pintar, A.L.**, Toman, B., Leber, D., and Guthrie, W., Bayesian Adaptive Designs for Testing System Effectiveness, at the Quality and Productivity Research Conference, Niskayuna, NY, June 5, 2013.
- **Pintar, A.L.**, Robinson, T.J., Anderson-Cook, C.M., and Hamada, M.S., A Bayesian Approach to the Analysis of Split-Plot Product Arrays and Prediction in Robust Parameter Design, 2012 Joint Statistical Meetings, San Diego, CA, August 1, 2012.
- **Pintar, A.L.**, Possolo, A., and Zhang, N.F., Statistical Methods for Change-Point Detection in Surface Temperature Records, International Temperature Symposium 9, Anaheim, CA, March 21, 2012.
- **Pintar, A.L.**, Mapping Return Values of Extreme Wind Gusts, the Conference on Risk Assessment, College Park, MD, October 13, 2011.
- **Pintar, A.L.**, Anderson-Cook, C.M., and Wu, H., Bayesian Model Selection for Prediction of Future Reliability Using a Generalized Linear Model, the Quality and Productivity Research Conference, Roanoke, VA, June, 2011.
- **Pintar, A.L.**, Anderson-Cook, C.M., and Wu, H., Prediction Emphasized Covariate Selection for Generalized Linear Models, 2009 Fall Technical Conference, Indianapolis, IN, October, 2009.
- **Pintar, A.L.**, Anderson-Cook, C.M., and Wu, H., Mean Squared Error in Model Selection, the Quality and Productivity Research Conference, Yorktown Heights, NY, June, 2009.

Discussion

- **Pintar, A.L.** The Need and Methods for Routine Inclusion of Model Uncertainty in Statistical Results, 2017 Joint Statistical Meetings, Baltimore, MD, July, 2017.

NIST Seminar

- **Pintar, A.L.**, Threshold Averaging With Peaks Over Threshold Extreme Value Models for Wind Tunnel Tests, Gaithersburg, MD, March 11, 2020.
- **Pintar, A.L.**, Hierarchical Bayesian Models for Accelerated Degradation Tests of Polymers, Gaithersburg, MD, September 20, 2019.
- **Pintar, A.L.**, Maps of Extreme Wind Speeds, Gaithersburg, MD, April, 2014.
- **Pintar, A.L.** and Toman, B., An R Package for Bayesian Group Sequential Design for Binomial Experiments, during Gaithersburg, MD, May, 2013.

Contributed Presentations

- **Pintar, A.L.**, Anderson-Cook, C.M., and Wu, H., Selecting Linear Models Under the Bayesian Paradigm With Focus on Good Prediction Over a User-Specified Distribution on the Covariate Space, 2011 Joint Statistical Meetings, Miami Beach, FL, August, 2011.
- **Pintar, A.L.**, Anderson-Cook, C.M., and Wu, H., Prediction-Based Model Selection, 2009 Joint Statistical Meetings, Washington DC, August, 2009.
- **Pintar, A.L.** and Maitra, R., Ordering the Works of Plato, 2007 Spring Research Conference Ames, IA, May, 2007.
- **Pintar, A.L.** and Jayawardhana, A.A., A Simulation Study to Test the Accuracy of Using Maximum Likelihood Predictive Density in Quality Control Assuming the Power Rule Model and the Exponential Distribution, 2005 Joint Statistical Meetings, Minneapolis, MN, August, 2005.

Contributed Posters

- **Pintar, A.L.**, Levine, Z.H., Yoon, H.W., and Maxwell, S.E., Linearity Characterization and Uncertainty Quantification for Spectroradiometers, ITL Science Day, virtual, October 28, 2021.
- **Pintar, A.L.**, Threshold Averaging for Peaks-Over-Threshold Extreme Value Analysis of Wind Tunnel Data, ITL Science Day, virtual, October 29, 2020.
- **Pintar, A.L.**, Threshold Averaging for Peaks-Over-Threshold Extreme Value Analysis of Wind Tunnel Data, 2020 Joint Statistical Meetings, virtual, August 4, 2020.
- **Pintar, A.L.**, White, C., and Sung, L., Bayesian Hierarchical Models for Accelerated Degradation Tests of Polymers, ITL Science Day, Gaithersburg, MD, November 6, 2019.

- **Pintar, A.L.**, Jiang, J., Sadek, F., Main, J., and Weigand, J., Improved Calculation of Fire Resistance for Composite Concrete Slabs with Sequential Experimentation, Quality and Productivity Research Conference, American University, Washington, DC, June 11, 2019.
- Blattner, T., Garboczi, E., Holmgren, A., Levine, Z., Peskin, A., **Pintar, A.L.**, Scatter Corrections in X-ray Computed Tomography: Fundamental Limits and Rapid Algorithms, ITL Science Day, Gaithersburg, MD, November 1, 2018.
- **Pintar, A.L.**, Incorporating Statistical Model Uncertainty by Continuous Model Expansion, ITL Science Day, Gaithersburg, MD, November 2, 2017.
- **Pintar, A.L.**, Pérez, D.L., Lin, N.J., and Lin-Gibson, S., Statistical Methods for Quantifying Antimicrobial Properties of Quaternary Pyridinium Salts, ITL Science Day, Gaithersburg, MD, 2016.
- **Pintar, A.L.** and Lombardo, F.T., Mapping Return Values of Extreme Wind Speeds, ITL Science Day, Gaithersburg, MD, 2012.

Webinars

- **Pintar, A.L.**, An Introduction to ANOVA, ASQ Statistics Division, January 16, 2018.
- **Pintar, A.L.**, ANOVA as Model Comparisons, ASQ Blue Ridge Section, May 16,
  2018.

Standard Reference Materials

Certification of the chemical properties and physical characteristics of Standard Reference Materials (SRMs) to be used for measurement assurance and calibration is an important part of NIST's mission. The certified or reference values included on an SRM certificate establish the official values of the relevant quantities (e.g. the pH or the mass fraction of sulfur in a material) on the basis of an extensive and often complex experiment designed and analyzed at NIST by a statistician in collaboration with a team of highly-qualified scientists or engineers.

See this website for more information about SRMs http://www.nist.gov/srm/index.cfm.

A NIST Mathematical Statistician must write an accompanying report of analysis for each SRM that they work on, for internal use, and to be reviewed and approved by the Chief Statistician of the Statistical Engineering Division.

- **SRM C2415a** Battery Lead (UNS 52770)
- **SRM 2910b** Hydroxyapatite
- **SRM 2787** Fine Particulate Matter (less than 10 micrometers)
- **SRM 2786** Fine Particulate Matter (less than 4 micrometers)

- **SRM 2780a** Hard Rock Mine Waste
- **SRM 2779** Gulf of Mexico Crude Oil
- **SRM 2777** Weathered Gulf of Mexico Crude
- **SRM 2718a** Green Petroleum Coke
- **SRM 2685c** Bituminous Coal (Nominal Mass Fraction 5% Sulfur)
- **SRM 2684c** Bituminous Coal (Nominal Mass Fraction 3% Sulfur)
- **SRM 2683c** Bituminous Coal (Nominal Mass Fraction 2 % Sulfur)
- **SRM 2682c** Subbituminous Coal (Nominal Mass Fraction 0.5% Sulfur)
- **SRM 2454a** Hydrogen in Titanium Alloy (Nominal Mass Fraction 215 mg/kg H)
- **SRM 2453a** Hydrogen in Titanium Alloy (Nominal Mass Fraction 125 mg/kg H)
- **SRM 2452** Hydrogen in Titanium Alloy (Nominal Mass Fraction 60 mg/kg H)
- **SRM 2088** Density Standard for Medical Computed Tomography
- **SRM 2087** Dimensional Standard for Medical Computed Tomography
- **SRM 1991** Mixed Coal Tar/Petroleum Extract in Methylene Chloride
- **SRM 1974c** Organics in Mussel Tissue (*Mytilus edulis*)
- **SRM 1957** Organic Contaminants in Non-Fortified Human Serum
- **SRM 1635a** Trace Elements in Coal (Subbituminous)
- **SRM 1633c** Trace Elements in Coal Fly Ash
- **SRM 1632e** Trace Elements in Coal (Bituminous)
- **SRM 1584** Priority Pollutant Phenols in Methanol
- **SRM 1582** Petroleum Crude Oil
- **SRM 1580** Organics in Shale Oil
- **SRM 1453** Thermal Conductivity – Expanded Polystyrene Board
- **SRM 1412a** Multicomponent Glass
- **SRM 1085c** Wear Metals in Lubricating Oil
- **SRM 612** Trace Elements in Glass.
- **SRM 610** Trace Elements in Glass.
- **SRM 131h** Refined Cast Iron.

Teaching and Mentoring

University Courses

- **EMAP 502** *co-instructor*, Georgetown University (Fall 18, Fall 19, Fall 20, Fall 21).
- **STAT 543 Probability and Statistics II** *Teaching Assistant*, Iowa State University (Spring 09).
- **STAT 542 Theory of Probability and Statistics** *Teaching Assistant*, Iowa State University (Fall 07, Fall 08).
- **STAT 104 Introduction to Statistics** *Course Instructor*, Iowa State University (Spring 07, Fall 06, Summer 06, Spring 06, Fall 05, Summer

05).
- **STAT 101 Principles of Statistics** *Lab Instructor and Grader*, Iowa State University (Spring 05).
- **MATH 110 College Algebra with Review** *Course Instructor*, Pittsburg State University (Fall 04).
- **MATH 143 Elementary Statistics** *Course Instructor*, Pittsburg State University (Spring 04).
- **MATH 113 College Algebra** *Course Instructor*, Pittsburg State University (Fall 03, Spring 04).

Short Courses

- **Pintar, A.L.** and Koepke, A.A., Bayesian Methods for Quantifying Measurement Uncertainty, NIST, Boulder, CO, March 27 – 29, 2018.
- **Pintar, A.L.**, Toman B., and Rukhin A., Bayesian Methods, NIST, Gaithersburg, MD, December 5th, 7th, and 8th, 2016.
- **Pintar, A. L.**, Applied Problem Solving and Research Using Statistical Methods with NIST Examples, September 22, 2016 in Regina, Canada, and September 23, 2016 in Saskatoon, Canada.
- **Pintar, A.L.** Bayesian Metrology Introduction with NIST Examples, the American Society of Mechanical Engineers PTC 19.1 meeting, Savannah, GA, January 14, 2016.
- **Pintar, A.L.**, Toman B., and Rukhin A., Bayesian Methods, NIST, Gaithersburg, MD, December 2nd and 3rd, 2015.
- **Pintar, A.L.**, Toman, B. and Leber, D., Bayesian Methods, NIST, Gaithersburg, MD, 2012.

Tutorials

- **Pintar, A.L.**, Some Common Experiment Designs, November 4, 2020, for a group in the NIST Engineering Laboratory, and on January 6, 2021 for a group in the NIST Physical Measurement Laboratory.
- **Pintar, A.L.**, R Introduction: Lesson Two, NIST, Gaithersburg, MD, February 28, 2018.
- **Pintar, A.L.**, R Introduction: Lesson One, NIST, Gaithersburg, MD, February 14 and June 18, 2018.

Summer Undergraduate Research Fellowship (SURF)

- K. Sadek (2020) Designing Experiments to Estimate the Non-linear Response of a Spectroradiometer
- M. Kasner (2016) Simulation Study of the Accuracy of Predictions from Poisson Process Extreme Value Models
- M. Milosavljevic (2014) Seasonal and Spatial Patterns in the Atmospheric Concentration of Greenhouse Gases

Other Mentoring

- Virginia Tech. Computational Modeling and Data Analytics Capstone Project Program, Spring 2021, Spring 2022, contributed a project and mentored the team that worked on the project.

Educational Outreach

- Coordinate a STEM program for the kindergarten class of the NIST Child Care Center. My effort consists of recruiting NIST scientists willing to give laboratory tours and/or lead STEM activities with the kindergarten class, and scheduling the tours/activities, 2017 – present.
- Judge for the high school Mathematics and Physics category of the 2016 Montgomery County Science Fair held on March 12, 2016.
- Richard Montgomery High School Career Day, presentation about NIST, February, 2016.
- Howard County Math Festival, interactive presentation on recurrence plots of voice recordings, November, 2015 with Steve Lund and Hari Iyer.
- Howard County Math Festival, presentation on variability by collecting reaction time data interactively , November, 2014 with Steve Lund and Hari Iyer.
- Howard County Math Festival, presentation on the Monte Hall problem, January, 2014 with Fern Hunt.

Funded Research Proposals

Building the Future

- **Pintar, A.**, Haber, G., Choong, Y., Buchanan, K., Analysis of NIST Survey Data, FY 2022.
- **Pintar, A.** Iyer, H. Lund, S., Rukhin, A. and Guthrie, W., Taming Model Uncertainty, FY 2018.
- **Pintar, A.L.**, Blattner, T.J., Peskin, A.P., and Levine Z.H., Tomography with scattering: a likelihood-guided approach, FY 2018.

Strategic and Emerging Research Initiatives Proposals

- Madison, A. and Stavis, S., Camp, C., **Pintar, A.**, Nanoplastic Arrays for Microspectroscopy Calibrations and Sorption Studies, FY 2021 and 2022.

External to NIST

- Herman, M., Lund, S., Iyer, H., Dogan, G., **Pintar, A.**, Quantitative Evaluation of Footwear Evidence: Advancing the Footwear Impression Comparison System (FICS) towards Casework Application, funded by the NIJ, FY 2021 and 2022.

Professional Service

Editorial

- Associate Editor, Transactions on Mathematical Software, *current*.
- Associate Editor, Statistical Analysis and Data Mining, *past*.
- Associate Editor, Journal of Statistics Education, *past*.

Review and Referee

- Applied Stochastic Models in Business and Industry
- ASTM (Standards)
- Environmental Science and Technology
- Journal of Metrology Society of India
- Journal of Quality Technology
- Journal of Research of NIST
- Journal of Statistical Inference and Planning
- Journal of Statistics Education
- Journal of Structural Engineering
- Kansas State Applied Statistics in Agriculture Conference Proceedings
- Metrologia
- Polymer Degradation and Stability
- Precision Engineering
- Quality Engineering
- Technometrics
- Transactions on Mathematical Software
- Washington Editorial Review Board

Conference Chair

- 2019 Fall Technical Conference, NIST, Gaithersburg, MD.

American Society for Quality

- **Technical Reviewer** for the Statistics Digest of the American Society for Quality Statistics Division, April, 2022 – present
- **Committee Member**, Fall Technical Conference program committee, American Society for Quality Statistics Division representative, 2018.
- **Webinar Coordinator** of the American Society for Quality Statistics Division, January, 2017 – 2019.
- **Past Chair** of the American Society for Quality Statistics Division, January, 2016 – December, 2016.
- **Chair** of the American Society for Quality Statistics Division, January, 2015 – December, 2015.

- **Chair Elect** of the American Society for Quality Statistics Division, January, 2014 – December, 2014.
- **Treasurer** of the American Society for Quality Statistics Division, July, 2011 – December, 2013.

American Statistical Association

- **Committee Member**, W.J. Youden Award in Interlaboratory Testing, *current*.
- **Committee Member**, Mary G. and Joseph Natrella Scholarship, *current*.

DATAWorks Workshop

- **Committee Member**, DATAWorks workshop program committee, 2018.

Institutional Service

- Statistical Engineering Division committee tasked with reviewing, documenting, and revising when necessary, the hiring practices of the Statistical Engineering Division, *ongoing*.
- Seminar coordinator for the Statistical Engineering Division of NIST, 2016 – present.
- Backup evacuation coordinator for the Statistical Engineering Division of NIST, 2015 – present.
- Judge for the Sigma-Xi poster contest in 2011 and 2014. The contest is held among NIST postdoctoral researchers.
- Member of the NIST ITL awards committee in 2013.
- Student member of the Student Programs Advisory Committee at Los Alamos National Laboratory, May, 2009 - August, 2009.
- Student member of the department library committee in the Department of Statistics at Iowa State University, 2009 - 2010.
- Student member of the department social committee in the Department of Statistics at Iowa State University, 2008 - 2009.
- Recycling coordinator for the Iowa STATERS, 2007 - 2008.

Software

Released

- **R Package: potMax** Estimate the Distribution of the Maximum of a Time Series Using Peaks-over-threshold Models https://github.com/usnistgov/potMax
- **R Package: mewAvg** A Fixed Memory Moving Expanding Window Average https://cran.r-project.org/web/packages/mewAvg/index.html

Developed but not Released

- **R Package: WindMap** Maps of Return Values for Extreme Winds Over the Contiguous United States
  - This software was developed in conjunction with a project that had the goal of proposing maps of extreme wind speeds to revise the maps in the 2010 edition of the ASCE/SEI 7 publication. Numeric versions of the maps were developed in a separate analysis. The software displays and extracts values from the numeric versions
- **R Package: AdaptiveDesign** Calculate Bayesian Adaptive Experiment Designs
  - This software is for calculating a Bayesian adaptive experiment design to test the hypotheses H0: p <= p0 versus Ha: p > p0. The output is a tree describing the experiment. To view the tree in a nice form, graphviz is also needed.

Computing Environments and Languages

Substantial Experience

R, C, Python, Jags, Stan, LaTeX

Some Experience

Julia, SAS, JMP, Minitab, Bash, Fortran, C++