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Personal

Born on January 12, 1971 (neé Pittman).

United States Citizen.

Education

B.A. Mathematics, Skidmore College, Saratoga Springs, NY, 1993.

B.A. Psychology, Skidmore College, Saratoga Springs, NY, 1993.

M.S. Statistics, Carnegie Mellon University, 1995.

Ph.D. Statistics, The Pennsylvania State University, 2000.

Employment History

Professor, Department of Food Science and Technology, Department of Statistics, University of Nebraska Lincoln, Lincoln NE 2017 – present.

Director, Quantitative Life Sciences Initiative, University of Nebraska Lincoln, Lincoln NE 2013 – present.

Associate Faculty Member, Pamela Buffet Cancer Center, University of Nebraska Medical Center, Omaha NE 2014 – present.

Faculty Member, University of Nebraska Food for Health Center, 2016 – 2023.

Associate Professor, Department of Food Science and Technology, Department of Statistics, University of Nebraska Lincoln, Lincoln NE 2013 – 2017.

Associate Professor, Division of Biostatistics, Department of Epidemiology and Public Health; Department of Medicine; Department of Psychiatry and Behavioral Sciences, Leonard M. Miller School of Medicine, University of Miami, Miami FL 2013.

Faculty Member, Center for Computational Sciences; Braman Family Breast Cancer Research Institute; Sylvester Comprehensive Cancer Center, University of Miami, Miami FL 2008 – 2013.

Assistant Professor, Division of Biostatistics, Department of Epidemiology and Public Health; Department of Medicine; Department of Psychiatry and Behavioral Sciences, Leonard M. Miller School of Medicine, University of Miami, Miami FL 2007 – 2013.

Invited Participant, Programme in Statistical Theory and Methods for High Dimensional Data, Isaac Newton Institute for Mathematical Sciences, Cambridge University, Cambridge, UK, January 2008 – March 2008.

Research Assistant Professor, Department of Statistical Sciences, Duke University, Durham NC 2005 – 2007.

Research Assistant Professor, Department of Biostatistics and Bioinformatics; Senior Scientist, Institute for Genome Sciences and Policy, Duke University, Durham NC 2004 – 2007.

Visiting Assistant Professor, Department of Statistical Sciences, Duke University, Durham NC 2001 – 2004.

Postdoctoral Research Fellow, National Institute of Statistical Sciences, Research Triangle Park NC 2000 – 2001.

Co-Director and Financial Officer, Statistical Consulting Center, Department of Statistics, The Pennsylvania State University, State College PA 1999 – 2000.

Research Assistant and Instructor, Center for Multivariate Analysis, Department of Statistics, The Pennsylvania State University, State College PA 1996 – 2000.

Honorary Visiting Scientist, Machine Intelligence Unit, Indian Statistical Institute, Calcutta, India, December 1998 – March 1999.

Teaching Assistant, Department of Statistics, The Pennsylvania State University, State College PA 1995 – 1996.

Teaching Assistant, Department of Statistics, Carnegie Mellon University, Pittsburgh PA 1993 – 1995.

Professional Service

Editorial

Associate Editor, *The Plant Phenotyping Journal*, 2024 – present.

Guest Editor, Plant Breeding Research Topic: IPPS 2022 - Plant Phenotyping for a Sustainable Future, *Frontiers in Plant Science*, 2022 – 2024.

Guest Editor, Technical Advances in Plant Science Research Topic: Women in Plant Science - Linking Genome to Phenome, *Frontiers in Plant Science*, 2022 – 2024.

Associate Editor, Book Reviews, *Journal of the American Statistical Association/ The American Statistician*, 2020 – 2023.

Associate Editor, Reviews, *Journal of the American Statistical Association*, 2020 – 2023.

Guest Editor, Special Issue on Digital Agriculture, *Plant Physiology*, 2020-2021

Associate Editor, *Plant Phenomics*, a Science Partner Journal, 2019 – 2023.

Associate Editor, *Sankhyā Series B*, Applied and Interdisciplinary Statistics, 2016 – 2024.

International Service

Member, Local Organizing Committee, IISA Annual Conference 2025, Lincoln, NE, June 12-15.

Lead Organizer/Host, International Plant Phenotyping Symposium (IPPS) 2024, Lincoln, NE, October 7-11, 2024.

Chair, International Plant Phenotyping Network, 2024 – 2028.

Academic Section Chair, International Plant Phenotyping Network, 2020 – 2023.

Executive Board Member, International Plant Phenotyping Network (IPPN), 2019 –present.

UNL Institutional Representative, International Plant Phenotyping Network (IPPN), 2016 – present.

U.S. Department of State professional Exchange Program, Mission to Brasil, 2023.

Organizer, Special Session on Digital Agriculture, 20th Conference on Intelligent Systems for Molecular Biology (ISMB), International Society for Computational Biology. July 10-14, 2022, Madison, WI.

National/Regional Service

Co-organizer (with Seth Murray, Texas A&M), Scientific Session, *Plant Phenomics: Catalyzing a Paradigm Shift in Biology to Bolster Food Security*, 2025 AAAS Annual Meeting, Boston, MA, February 15, 2025

NSF EPSCoR Peer Review Panel Member, 2024.

Advisory Board Member, Tech Hub LIVE Conference and Expo 2024, Iowa Events Center, Des Moines, IA, July 29-31, 2024

AAAS Steering Committee At-Large Representative, Section U (Statistics), 2023 – 2025.

External Scientific Advisor, NSF BII: New Roots for Restoration: integrations plant traits, communities, and the soil ecosphere to advance restoration of natural and agricultural systems, 2021 – present.

Member, Plant Sciences Institute Advisory Board, Iowa State University, 2021 – present (Chair 2024).

Session proposal reviewer, AAAS 2023 Annual Meeting - Section U (Statistics).

Lead Organizer/Chair, National Agricultural Producer Data Cooperative (NAPDC) Conference, Lincoln, NE, May 10-12, 2023 and August 7-9, 2024.

Co-Chair, Diversity, Equity, Inclusion Committee, North American Plant Phenotyping Network, 2021–2023.

Workshop Organizer, *Plant Phenotypes*, Plant and Animal Genome Conference XXIX, January 2022.

Past Chair (2022 – 2023), Chair (2021 – 2022) and Co-Chair (2020 – 2021), North American Plant Phenotyping Network.

Executive Board Member (Computational, Public Sector), North American Plant Phenotyping Network (NAPPN), 2020 – 2022.

AAAS Section U (Statistics) - Electorate Nominating Committee, 2018 – present (Chair, 2021).

Program Committee Chair, NAPPN Annual Conference, Virtual, Feb 2021.

Invited Workshop Participant, *At the Tipping Point: A Future of Fused Chemical and Data Science*, Council for the Chemical Sciences, Geosciences, and Biosciences Division, Office of Basic Energy Sciences, Department of Energy, September 21-23, 2020.

Conference Chair, Phenome 2020, Tucson, AZ, Feb 2020.

Steering Committee Member, National Science Foundation Midwest Big Data Hub, 2015 – 2019 (Seed Grant Steering Committee Chair, 2019 – 2023).

Review Panel Member, R & D in Forensic Sciences - Panel 3 (Forensic Biology), National Institute of Justice, 2018, 2020, 2022.

Scientific Advisory Panel, American Foundation for Suicide Prevention, 2015 – 2020.

Conference Co-Chair and Logistics Committee Lead, Phenome 2019, Tucson, AZ, Feb 2019.

Standing Member, National Institutes of Health National Cancer Institute Transition to Independence Review Committee (NCI-I), 2013 – 2016, 2017 – 2019.

Program Committee Chair, Midwest Big Data Hub All-Hands Meeting in Digital Agriculture, Lincoln, NE, September 2018.

Member, Program Committee, Phenome 2018, Tucson, AZ, Feb 2018.

Member, Local Organizing Committee, All-Hands Meeting of the Midwest Big Data Hub, Omaha, NE, Oct 2017.

Ad Hoc Executive Committee Member, North American Plant Phenotyping Network (NAPPN), 2016 – 2018.

Review Panel Member, R & D in Forensic Sciences - Panel 2 (Trace), National Institute of Justice, 2015 – 2016, 2018.

Steering Committee Member, Great Plains Network (GPN), 2015 – 2017.

Organizing Committee Member, Big Data Hub All-Hands Meeting in Digital Agriculture, Ames, IA, May 2016.

Ad Hoc Member, National Institutes of Health National Cancer Institute Career Development Review Committee (NCI-I), 2011 – 2013.

Publications Officer, Section on Risk Analysis, American Statistical Association, 2011 – 2013.

Vice President, South Florida Chapter of the American Statistical Association, 2011 – 2012.

Conference Session Organizer, Frontiers in Dynamic Modeling and Machine Learning, ASA Section on Statistical Learning and Data Mining, Joint Statistical Meetings, Miami Beach, FL, 2011.

Academic Program Reviews

Internal Member, Review Committee, University of Nebraska Lincoln, Department of Agricultural Economics, 2025.

Internal Member, Review Committee, University of Nebraska Lincoln, University of Nebraska Center for Biotechnology, 2025.

Internal Member, Review Committee, University of Nebraska Lincoln, Department of Earth and Atmospheric Sciences, 2024.

Internal Member, Review Committee, University of Nebraska Lincoln, Department of Biochemistry, 2023.

Internal Member, Review Committee, University of Nebraska Lincoln, School of Natural Resources, 2022.

Internal Member, Review Committee, University of Nebraska Lincoln, Department of Educational Administration, 2022.

Internal Member, Review Committee, University of Nebraska Lincoln, Department of Mathematics, 2014.

University Service

Member, Graduate Council (representative for Life Sciences), University of Nebraska Lincoln, Lincoln NE 2017 – 2024.

Member, College of Agricultural Sciences and Natural Resources (CASNR) Curriculum Committee, University of Nebraska Lincoln, Lincoln NE 2017 – 2024.

Director, Quantitative Life Sciences Initiative, University of Nebraska Lincoln, Lincoln NE 2013 – present.

Director, Interdisciplinary PhD Program in Complex Biosystems, University of Nebraska Lincoln, Lincoln NE 2015 – present.

Member, Academic Planning Committee (representative for Graduate Council; Chair 2019-2020 and 2024-2025), University of Nebraska Lincoln, Lincoln NE 2017 – present.

UNL Representative, International Plant Phenotyping Network, 2016 – present.

Member, Faculty Advisory Committee, Center for Biotechnology, University of Nebraska Lincoln, Lincoln NE, 2014 – present.

Member, Agricultural Research Division (ARD) Director's Council, 2018 – 2023.

Member, Executive Vice Chancellor's Comprehensive Research Data Strategy Task Force, 2022 – 2023.

Member, Chancellor's Budget Model Advisory Committee, 2021 – 2023.

Member, Chancellor's Steering Committee on RCM, 2019 – 2021.

Member, University of Nebraska Research Data Policy Committee, 2019 – 2022.

Member, Office of Research and Economic Development (ORED) Research Data Infrastructure Committee, 2019 – 2022.

Chair, Holland Computing Center Scientific Advisory Committee, 2018 – 2021 (Member, 2014 – 2021).

Member, Leadership Committee, Plant Phenotyping Consortium, University of Nebraska Lincoln, Lincoln NE, 2015 – 2020.

Member, University Judicial Board, University of Nebraska Lincoln, Lincoln NE 2015 – 2018.

Representative for Department of Public Health Sciences, Faculty Council, Leonard M. Miller School of Medicine, University of Miami, Miami FL 2010 – 2013.

Professional Memberships

American Association for the Advancement of Science (AAAS); American Association for Cancer Research (AACR); American Statistical Association (ASA); Institute of Mathematical Statistics (IMS); International Indian Statistical Association (IISA); International Society for Bayesian Analysis (ISBA); International Society for Computational Biology (ISCB); North American Plant Phenotyping Network (NAPPN)

Honors and Awards

Scientific Visitor, Division of Biosciences & Biotechnology, Directorate of Physical and Life Sciences, Lawrence Livermore National Laboratory, August 3-24, 2025.

Equity, Inclusivity, and Diversity Award, North American Plant Phenotyping Network, 2024

UNL Fellow, Big10 Academic Leadership Program, AY 2022-2023

Invited Commencement Speaker, *The Power of Perspective*, UNL Graduate Commencement and Hooding, Pinnacle Bank Arena, Lincoln, NE, May 2021.

Executive Certificate in Leadership, UNL Office of Research and Economic Development Research Leaders Program, Center for Executive and Professional Development, UNL College of Business, April 2021.

2020 Recipient of the National Institute of Statistical Sciences (NISS) Distinguished Alumni Award for Cross-Disciplinary Research https://www.niss.org/news/niss-announces-annual-awards

Winner, Association of Biomolecular Resource Facilities (ABRF) Best Poster Award, for Guettouche, T., **Clarke, J.**, Andersen, A., Navarro, L., Cardentey, Y., Hulme, W., Bademci, G., Van Booven, D., Hedges, D., Pericak-Vance, M., and Gilbert, J. An Improved Workflow for miRNA Expression Profiling Using Ion Semiconductor Sequencing. ABRF Annual Meeting, Orlando, FL, 2012.

National Institutes of Health National Cancer Institute K25 Career Development Award, 2005 – 2010.

Duke University Breast SPORE Career Development Award for Research, 2004.

Honorable mention, Best Contributed Paper Competition in Section on Statistical Computing, American Statistical Association, Joint Statistical Meetings, Baltimore, MD, 1999.

United States Army Research Office (AASERT) graduate research award, 1997 – 2000.

Graduate Student and Postdoctoral Advisees

Postdoctoral Advisor, T. Singh, *Efficient computation via AI of quantitative phenotypic traits from large root images*. Department of Statistics, University of Nebraska-Lincoln, 2025 – present.

Postdoctoral Advisor, C. Valdes, *Novel approaches to segmentation and analysis of high-dimensional 3D images of plant root structures*. Department of Food Science and Technology, University of Nebraska-Lincoln, 2020 – 2022. (Current Postdoctoral Scientist at Lawrence Livermore National Laboratory)

Thesis Advisor, E. Dutta, *Assessment of the Dose-Response Relationship Between Folate Exposure and Cognitive Impairment: Synthesizing Data from Documented Studies*. MS in Statistics, Department of Statistics, University of Nebraska-Lincoln, 2018 – 2020 (Current Doctoral Student in Statistics).

Thesis Advisor, J. Burow, *Diffusion Curves in Statistical Network Analysis*. MS in Statistics, Department of Statistics, University of Nebraska Lincoln, 2014 – 2016.

Postdoctoral Advisor, S. Antony-Babu, *Identification of complex patterns of microbial community structuring (bacteria, archaea and viruses) in ruminant and non-ruminant animal model systems*. Department of Animal Sciences, University of Nebraska-Lincoln, 2014 – 2017. (Current Assistant Professor at Texas A & M)

Postdoctoral Advisor, S. Amiri, *Novel clustering approaches to non-convex and complex data, with application to metagenomics and microbial communities*. Department of Statistics, University of Nebraska-Lincoln, 2013 – 2015. (Current Research Scientist at Montreal Neurological Institute-Hospital, McGill University)

Thesis Co-Advisor (with Nagi Ayad), V. Stathias, *Identification of Novel Combinatory Targets in Glioblastoma*. PhD in Genetics, Program in Biomedical Sciences, University of Miami School of Medicine, 2012 – 2017. (Current Lead Data Scientist, Sylvester Comprehensive Cancer Center, University of Miami)

Thesis Advisor, J Lin, *Factors associated with HPV vaccination receipt and interest among U.S. adults*. Master of Science in Public Health, Department of Epidemiology and Public Health, University of Miami School of Medicine, 2011 – 2013.

Thesis Advisor, D. Sussman, *Toll-like Receptors and Clinical Characteristics of Colorectal Neoplasia.* Master of Science in Public Health, Department of Epidemiology and Public Health, University of Miami School of Medicine, 2009 – 2011.

Publications

Books and Monographs

Clarke, J., Qiu, Y., and Schnable, J. Experimental Design for Controlled Environment High Throughput Plant Phenotyping. In: *High Throughput Plant Phenotyping: Methods and Protocols*, In: Lorence, A., Medina Jimenez, K. (eds) High-Throughput Plant Phenotyping. Methods in Molecular Biology, vol 2539. July 2022. Humana, New York, NY. https://doi.org/10.1007/978-1-0716-2537-8_7

Clarke, B., and **Clarke, J.** *Predictive Statistics*, Cambridge University Press. A graduate level textbook on prediction in statistics. Publication date April 12, 2018. https://www.cambridge.org/core/books/predictive-statistics/875021D46B2B7FF26F62E1B072105C50#. Reviewed in Binder, H. Biometrical Journal, 2019, 61: 1600.

Pittman, J. Multilayer perceptrons and fractals. In: *Encyclopedia of Computer Science and Technology*, Volume 45 – Supplement 30, A Kent and J Williams, Eds., CRC Press, 177-197, 2002.

Pittman, J. Multilayer perceptrons and fractals. In: *Encyclopedia of Microcomputers*, Volume 28 Ð Supplement 7, A Kent and J Williams, Eds., CRC Press, 189-210, 2002.

Manuscripts Submitted for Publication

Okur, I., **Clarke, J.**, Stratton, J., Sullivan, G., Danao, M.-G., and Dickson, J. Microbial inactivation in raw chicken using high-pressure processing (HPP): A rapid systematic review, and meta-analysis. Food Control, submitted September 2025.

Gomes-Neto, J. C., Crook, A., Hestrin, R., Li, G., Liew, C.-S., Rosa, G., Singh, K., Tuggle, C. K., Summers, K. L., Valdes, C., Fahlgren, N., and **Clarke, J.** Challenges and Opportunities: Computational Biology and the Future of Agriculture. Bioinformatics Advances, in revision for publication September 2025.

Zhang, Y., Ntsiful, D., Israel, R., Vandenburg, B., Barnett, S., Riethoven, J.-J., **Clarke, J.**, Lagisetty, K., Lin, J., Reddy, R., Chang, A., Odell, S., DeFeo, A., Sartor, M., and Kresty, L. Identification of isoform switching events linked with esophageal adenocarcinoma patient survival informs novel prognostic and therapeutic targets. Cell Death and Disease, in revision for publication June 2025.

Suhr, M., Yang, Q., Korth, N., Happ, M., Kok, C. R., Miao, C., **Clarke, J.**, Karnik, K;, Eskridge, K., Flores, C., Hyten, D., Schnable, J., Rose, D., and Benson, A. Genetic variation and historical breeding patterns in common bean affect fermentation patterns by the human gut microbiome. Communications Biology, revision submitted for publication September 2025.

Peer-Reviewed Journal Articles (accepted or appeared)

97. Callwood, J., Celebioglu, B., Gladman, N., Jung, J., Lachowiec, J., Quezada Rodriquez, E. H., McNamara, J. P., and **Clarke, J.** (2025). The need for robust, FAIR phenomic databases supporting agricultural efficiency and resiliency. Science and Public Policy, Science and Public Policy, scaf039, https://doi.org/10.1093/scipol/scaf039

96. Bernád, V., **Clarke, J.**, and Negrao, S., Women in Plant Science - Linking Genome to Phenome. Frontiers in Plant Science Technical Advances in Plant Science, Volume 15, 11 Sept 2024, https://doi.org/10.3389/fpls.

95. Weh, K., Howard, C., Zhang, Y., Tripp, B., **Clarke, J.**, Howell, A., Rubenstein, J., Abrams, J., Westerhoff, M., and Kresty, L. Prebiotic proanthocyanidins inhibit bile reflux-induced esophageal adenocarcinoma through reshaping the gut microbiome and esophageal metabolome. JCI Insight, 8 February 2024 https://doi.org/10.1172/jci.insight.168112

94. Tuggle, C.*, **Clarke, J.***, Murdoch, B.*, Lyons, E.*, Scott, N.*, Benes, B., Campbell, J., Chung, H., Daigle, C., Das Choudhury, S., Dekkers, J., Dorea, J., Ertl, D., Feldman, M, Frangomeni, B., Fulton, J., Guadagno, C., Hagen, D., Hess, A., Kramer, L., Lawrence-Dill, C., Lipka, A., Lubberstedt, T., McCarthy, F., McKay, S., Murray, S., Riggs, P., Rowan, T., Sheehan, M., Steibel, J., Thompson, A., Thornton, K., VanTassell, C., and Schnable, P. (2023, March 22). Current challenges and future of agricultural genomes to phenomes in the U.S.. Genome Biology 2024, 25, 8 https://doi.org/10.1186/s13059-023-03155-w

93. Zhang, Y., Weh, K., Tripp, B., **Clarke, J.**, Howard, C., Sunikumar, S., Howell, A., and Kresty, L. Cranberry Proanthocyanidins Mitigate Reflux-Induced Transporter Dysregulation in an Esophageal Adenocarcinoma Model. Pharmaceuticals, Special Issue Naturally-Occurring Dietary Compounds for Cancer Prevention and Therapy, 2023, 16(12), 1697 https://doi.org/10.3390/ph16121697

92. **Clarke, J.**, Cooper, L., Poelchau, M., Berardini, T, Elser, J., Farmer, A., Ficklin, S., Kumari, S., Laporte, M.-A., Nelson, R., Sadohara, R., Selby, S., Thessen, A., Whitehead, B., and Sen, T. Data sharing and ontology use among agricultural genetics, genomics, and breeding databases and resources of the AgBioData consortium. Databases, November 2023. https://doi.org/10.1093/database/baad076

91. LeBauer, D., Bucksch, A., **Clarke, J.**, Potts, J., and Roy, S. Providing conference participation support to increase racial diversity in the North American Plant Phenotyping Network. Special Section: North American Plant Phenotyping Network (NAPPN) Proc. 2022. The Plant Phenotyping Journal 2023, 6:1 e20075 https://doi.org/10.1002/ppj2.20075

90. Dustin, D., Clarke, B., and **Clarke, J.** Predictive Criteria for Prior Selection Using Shrinkage in Linear Models. Computational Statistics 2023 https://doi.org/10.1007/s00180-023-01342-8

89. Graham, E., Tom, W., Neujahr, G., Adamowicz, M., **Clarke, J.**, and Herr, J. The Persistence and Stabilization of Auxiliary Genes in the Human Skin Virome. Virology Journal 2023, 20 (1): 49 https://doi.org/10.1186/s12985-023-02012-3

88. Kittana, H., Gomes Neto, J., Heck, K., Juritsch, A., Sughroue, J., Xian, Y., Mantz, S., Segura Munoz, R., Cody, L., Schmaltz, R., Anderson, C., Moxley, R., Hostetter, J., Fernando, S., **Clarke, J.**, Kachman, S., Cressler, C., Benson, A., Walter, J., and Ramer-Tait, A. A. A causal role for Escherichia coli strains identified as adherent-invasive (AIEC) in intestinal inflammation. mSphere 2023, 8:2 https://doi.org/10.1128/msphere.00478-22

87. Zhang, Y., Weh, K., Howard, C., Reithoven, J.-J., **Clarke, J.**, Lagisetty, K., Lin, J., Reddy, R., Chang, A., Beer, D., and Kresty, L. Characterizing Isoform Switching Events in Esophageal Adenocarcinoma. Molecular Therapy, Nucleic Acids 2022, 29: 747–768; https://doi.org/10.1016/j.omtn.2022.08.018

86. Adamowicz, M., Rambo, T., and **Clarke, J.** Validation of the MaSTR™ Software for the Interpretation of 2 – 5 Person Mixed DNA Profiles. Genes 2022, 13(8), 1429 (Special Issue on State-of-the-Art in Forensic Genetics); https://doi.org/10.3390/genes13081429

85. Walker, C., Baumert, J., **Clarke, J.**, and Izard, J. Small bowel stomas are associated with higher risk of circulating food-specific-IgG than patients with organic gastrointestinal conditions and colostomies. BMJ Open Gastroenterology 2022, vol.9:e000906 http://dx.doi.org/10.1136/bmjgast-2022-000906

84. Graham, E., Adamowicz, M., Angeletti, P., **Clarke, J.**, Fernando, S., and Herr, J. Genome Sequence of Feline Papillomavirus Sstrain P20 Assembled from Metagenomic Data Isolated from the Skin of a House Cat Owner. Microbiology Resource Announcements, 2022, 11(7); https://doi.org/10.1128/mra.01070-21

83. Dogan, O., Stratton, J., Arciniega, A., **Clarke, J.**, Tamplin, M., Bianchini, A., and Wang, B. Quantitative modeling of the survival of Listeria monocytogenes in soy sauce-based acidified food products. International Journal of Food Microbiology, 370: 109635. June 2022. https://doi.org/10.1016/j.ijfoodmicro.2022

82. Lawrence-Dill, C., Allscheid, R., Boaitey, A., Bauman, T., Buckler, E., **Clarke, J.**, Cullis, C., Dekkers, J., Dorius, C., Dorius, S., Ertl, D., Homann, M., Hu, G., Losch, M., Lyons, E., Murdoch, B., Navabi, Z.-K., Punnuri, S., Rafiq, F., Reecy, J., Schnable, P., Scott, N., Sheehan, M., Sirault, X., Staton, M., Tuggle, C., Van Eenennaam, A., and Voas, R. Ten Simple Rules to Ruin a Collaborative Environment. PLoS Computational Biology 2022, 18(4): e1009957. https://doi.org/10.1371/journal.pcbi.1009957

81. Weh, K., Zhang, Y., Howard, C., Howell, A., **Clarke, J.**, and Kresty, L. Cranberry Polyphenols in Esophageal Cancer Inhibition: New Insights. Special Issue Plant-Based Foods in Cancer Prevention and Treatment. Nutrients 2022, 14 (5): 969. https://doi.org/10.3390/nu14050969

80. Graham, E., Fernando, S., **Clarke, J.**, Herr, J., and Adamowicz, M. The Application of The Skin Virome for Human Identification. FSI: Genetics, 57:102662 (2022). https://doi.org/10.1016/j.fsigen.2022.102662

79. Tuggle, C., **Clarke, J.**, Dekkers, J. Ertl, D., Lawrence-Dill, C., Lyons, E., Murdoch, B., Scott, N., and Schnable, P. The Agricultural Genome to Phenome Initiative: Creating a Shared Vision Across Crop and Livestock Research Communities. Genome Biology, 23:3 (2022). https://doi.org/10.1186/s13059-021-02570-

78. Weh, K., Turgeon, D., Rubenstein, J., **Clarke, J.**, Howell, A., Chang, A., and Kresty, L. Proanthocyanidins mitigate the differential influence of bile acid exposure on esophageal GSTT2 levels based on race. Molecular Carcinogenesis 2021, 61:3: 281-287. https://doi.org/10.1002/mc.23369

77. Dogan, O., Aditya, A., Ortuzar, J., **Clarke, J.**, and Wang, B. A Systematic Review and Meta-Analysis of the Efficacy of Processing Stages and Interventions for Controlling Campylobacter Contamination During Broiler Chicken Processing. Comprehensive Reviews in Food Science and Food Safety, 2021, 1-45. https://doi.org/10.1111/1541-4337.12860

76. Korth, N., Taylor, S., **Clarke, J.**, and Downs, M. Gluten Cross-Contact in Restaurant-Scale Cooking. Journal of Food Protection, 2021, 84 (12): 2159-2162. https://doi.org/10.4315/JFP-21-230

75. Sun, Y., **Clarke, J.**, Clarke, B., and Li, X. Predicting antibiotic resistance gene abundance in activated sludge using shotgun metagenomics and machine learning. Water Research 2021, 202: 117384. https://doi.org/10.1016/j.watres.2021.117384

74. LaTourrette, K., Stengel, A., and **Clarke, J.**. Student-Led Workshops: Filling Skills Gaps in Computational Research for Life Scientists. Natural Sciences Education, Special Section: Natural Sciences Education in a COVID-19 World, 2021, 50(1) e20052. http://dx.doi.org/10.1002/nse2.20052

73. Dutta, E., Loy, D., Deal, C., Wynn, E., Clawson, M., **Clarke, J.**, and Wang, B. Development of a multiplex real-time PCR assay for predicting macrolide and tetracycline resistance associated with bacterial pathogens of bovine respiratory disease. Pathogens 2021, 10(1): 64. https://doi.org/10.3390/pathogens100100

72. Ortuzar, J., Dogan, O., Sotomayor, G., Jimenez, C., **Clarke, J.**, Flores, R., Gray, G., Rupnow, J., and Wang, B. Quantitative assessment of microbial quality and safety risk: A preliminary case study of strengthening raspberries supply system in Chile. Food Control, 2020, 113: 107166. Epub ahead of print on February 18, 2020. https://doi.org/10.1016/j.foodcont.2020.107166

71. Min, K., Galvis, A., Nole, K., Sinha, R., **Clarke, J.**, Kirsner, R., and Ajdic, D. Association between baseline abundance of Peptoniphilus, a Gram-positive anaerobic coccus, and wound healing outcomes of DFUs. PLoS ONE, 2020, 15(1): e0227006. https://doi.org/10.1371/journal.pone.0227006

70. Frisbie, C. Lushnikov, A., Krasnoslobodtsev, A., Riethoven, J. J., **Clarke, J.**, Stepchenkova, E., and Petrosyan, A.. Post-ER stress biogenesis of Golgi is governed by giantin. Cells, 2019, 8(12), 1631. https://doi.org/10.3390/cells8121631

69. Adamowicz, M., **Clarke, J.**, Rambo, T., Makam, H., Copeland, S., Erb, D., Hendricks, K., McGuigan, J., Prosser, C., Todd, J., and Snyder-Leiby, T. Validation of MaSTR Software: Extensive study of fully-continuous probabilistic mixture analysis using PowerPlex Fusion 2-5 contributor mixtures. Forensic Science International: Genetics Supplement Series, 2019, 7(1):641-643. https://doi.org/10.1016/j.fsigss.2019.10

68. Rezapour, M., Quintero, M.A., Khakoo, N., Sussman, D., Barkin, J., **Clarke, J.**, Kashikar, N., Deshpande A., Kerman, D., Damas, O., Abreu M. Reclassifying Pseudopolyps in Inflammatory Bowel Disease: Histologic and Endoscopic Description in the New Era of Mucosal Healing. Crohn's and Colitis, 2019, 1:3:otz033. https://doi.org/10.1093/crocol/otz033

67. Dutta, E., Shao, K., **Clarke, J.**, Sahyoun, N., and Wang, B. Dose-Response Assessment between Folate Exposure and Risk of Cognitive Impairment: Synthesizing Data from Documented Studies. Risk Analysis, 2019, 40: 276-293. https://doi.org/10.1111/risa.13404

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Current and Pending Research Funding

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USDA AFRI, Clarke, J. *ODF: National Ag Producer Data Cooperative: Strategic Development of a National Framework*, $960,000, 09/01/23–08/31/2025. Role: Principal Investigator

USDA ARS Multistate Hatch, Craig, B. *NCCC170: Research Advances in Agricultural Statistics*, $250,000, 10/01/21 – 09/30/26. Role: Participant

USDA ARS Multistate Hatch, Tuinstra, M. *NC1212: Exploring the Plant Phenome in Controlled and Field Environments*, $250,000, 10/01/22 – 09/30/25. Role: Participant

Pending

USDA AFRI, Clarke, J. *ODF: National Agricultural Producers Data Cooperative: Establishment and Impact*, $955,075, 10/01/25–09/30/2027. Role: Principal Investigator

National Science Foundation EGFP, Wood, J. *Fueling the Research Pipeline: GRFP-Level Fellowships for High-Impact Training at the University of Nebraska*, $1,795,000, 03/01/26 – 02/28/29. Role: Key Personnel

DoD CMRP, Kresty, L. *A Pilot Study: A dietary strategy to improve epithelial fitness through targeting the microbiome-metabolic axis in Barrett's esophagus patients*, $3.0M, 09/01/25 – 08/31/29. Role: Co-Investigator and Subaward PI

Invited Presentations (conference or international/national organization)

43. Invited Seminar, *Statistical Predictive Modeling and Why AI/ML Works*, Biosciences and Biotechnology Division, Physical and Life Sciences Directorate, Lawrence Livermore National Laboratory, August 14, 2025.

42. Invited Presentation, *Envisioning Core Facilities: The Good, The Bad, and The Ugly*, PhenoSA–CBF Workshop on Phenotyping Data Workflows, Stellenbosch University, Cape Town, SA, June 27, 2025.

41. Invited Presentation, *Stability and Shrinkage Selection in High Dimensional Logistic Regression* (with Caleb Holmbeck, Dean Dustin, Laura Kresty, and Bertrand Clarke), International Indian Statistical Association Annual Conference 2025, University of Nebraska-Lincoln, June 12-15, 2025.

40. Invited Presentation, *Plant Phenomics and AI/ML*, PHENET Annual Meeting 2025, NOVA University of Science and Technology, Lisbon, Portugal, May 20-22, 2025.

39. Special Invited Lecture, *Stability as an Objective Criterion for Shrinkage Penalty Selection with Application in High Dimensions* (with Caleb Holmbeck, Dean Dustin, Laura Kresty, and Bertrand Clarke), International Indian Statistical Association Annual Conference 2024, Cochin University of Science and Technology, Kochi, India, December 27-31, 2024.

38. Invited Panel Discussion, *Data Ethics Working Group*, AgGateway Annual Conference 2024, Austin, TX, November 11-14, 2024

37. Invited Presentation and Panel Discussion, *Salon Session: Data, Tech, and AI Infrastructure*, Gathering of Open Ag Technology (GOAT) Conference, Paicines Ranch, CA, November 4-7, 2024

36. Invited Presentation, *Stability as an Objective Criterion for Shrinkage Penalty Selection (with Application in Esophageal Adenocarcinoma)* (with Caleb Holmbeck, Dean Dustin, and Bertrand Clarke), WNAR 2024 Conference, Ft. Collins, CO, June 9-12, 2024.

35. Keynote Lecture, *Statistics and AI: Occam vs. Hickam*, Artificial Intelligence in Agriculture Conference, Texas A & M University, College Station, TX, April 15-17, 2024.

34. Keynote Presentation, *Statistics and AI: Occam vs. Hickam*, North American Plant Phenotyping Network Annual Meeting, Purdue University, West Lafayette, IN, February 12-15, 2024.

33. Invited Panel Presentation, *Access to Data and Publication Options: Difference Among Land-Grant Institutions*, Winter Meeting, Board of Agriculture and Natural Resources (BANR), National Academy of Sciences, Engineering, and Medicine, Washington, D.C., December 5, 2023.

32. Invited Panel Presentation, *Rethinking Data Management*, Water and Irrigated Cropping Systems (WICS) Annual Conference 2023, Lincoln, NE, October 24, 2023.

31. Invited Presentation, *Leveraging AI/ML to address critical challenges in plant phenotyping research*, Phenotyping Symposium (PhenoVeg 2023), World Vegetable Center, Tainan, Taiwan, September 26-27, 2023.

30. Panel Presentation, *The role of academia in advancing agriculture sector data innovation and collaboration and the National Ag Producers Data Cooperative project*, The Agriculture Data Landscape: Mapping Initiatives and Policy Implications. Hosted by AGree/Meridian, September 14, 2023.

29. Webinar Presentation, *Phenotyping and FAIR: Challenges of data sharing and federation*, Smart farming: Challenges for the industrial utilization of advanced phenotyping sensors, hosted by Fraunhofer IIS, September 7, 2023.

28. Invited Presentation, *Sustainable Agriculture and Climate Change*, Expointer 2023, Porto Alegre, Brasil. U.S. Department of State Professional Exchange Program. September 1, 2023.

27. Invited Presentation, *Opportunities and Challenges in High-Throughput Digital Plant Phenotyping for Sustainable Crop Production*, EMBRAPA Digital Agriculture, Campinas, Brasil. U.S. Department of State Professional Exchange Program. August 31, 2023.

26. Invited Discussion, *Achieving Integration Across Multiple Ag-Data Platforms*, Tech Hub Live Conference and Expo, Des Moines, IA, July 25, 2023.

25. Conference Presentation, *A Volumetric Segmentation Method for Learning Structural Representations of Plant Roots in 3D X-Ray CT Scans*. **Valdes, C.**, Iyer-Pascuzzi, A., Meline, V., Claußen, J., Gerth, S., and Clarke, J.. Annual Conference of the North American Plant Phenotyping Network (NAPPN), St. Louis, MO, February 14-17, 2023.

24. Conference Presentation, *Statistics in Plant Phenotyping: Study Design and Data Management*. **Clarke, J.**, Ge, Y., and Qiu, Y. CS02: Flora & Fauna: Data Management for the Biological World, Conference on Statistical Practice, San Francisco, DA, February 2-5, 2023.

23. Conference Presentation, *Charting the Future of Agricultural Genomes to Phenomes Research*. Murdoch, B., **Clarke, J.**, Dekkers, J., Ertl, D., Lawrence-Dill, C., Lyons, E., Scott, N., Tuggle, C., and Schnable, P. Cattle/Sheep/Goat 1 Workshop, Plant and Animal Genome Conference (PAG) 30, San Diego, CA, January 13-18, 2023.

22. Conference Presentation, *Data sharing and data federation in genetics, genomics and breeding databases - current status, needs and future directions*. Poelchau, M., Ficklin, S., Sadohara, R., Selby, P., Sen, T,., Fermer, A., and **Clarke, J.**. AgBioData Workshop, Plant and Animal Genome Conference (PAG) 30, San Diego, CA, January 13-18, 2023.

21. Conference Presentation, *North American Plant Phenotyping Network (NAPPN)* and Panel Discussion, EMPHASIS and Phenotyping Networks, International Plant Phenotyping Symposium, Wageningen, Netherlands, September 27-30, 2022.

20. Seminar Presentation, *Plant Phenotyping Networks across different scales: What they are & how to effectively use them for outreach*. Satellite to Seeds - Spring Seminar Series, Plant Phenomics Phridays, Iowa State University and Virtual, April 29, 2022.

19. Conference Presentation, *AG2PI Agricultural Genome to Phenome Initiative: Shared Data Science Across Crop and Livestock Communities*. INFORMS Annual Meeting, Anaheim, CA, October 24-27, 2021.

18. Conference Presentation, *Human Identification Using the Skin Virome*, Adamowicz, M., **Clarke, J.**, Fernando, S., Graham, E., Herr, R., and Watkins, G. 73rd American Academy of Forensic Sciences (AAFS) Annual Scientific Meeting, Virtual, February 2021.

17. Panel Presentation, *Perspectives on Digital Agriculture in the United States*, Science and Innovation: How the bioeconomy is transforming agriculture. Global Bioeconomy Summit 2020, November 16-20, 2020.

16. Panel Presentation, *Science on Screen* at the Midwest Theatre, UNL Panhandle Research & Extension Center, Scottsbluff, NE, October 2019.

15. Keynote Presentation, *From Statistics to Data Science in n+1 Steps*, Bioinformatics and Computational Biology Symposium, Iowa State University, Ames, Iowa, April 2019.

14. Keynote Presentation, *Functional Modeling and Experimental Design in High-Throughput Plant Phenotyping*, with Xu, Y., Qiu, Y., and Schnable, J. 2nd Asian Pacific Plant Phenotyping Conference, Nanjing, Jiangsu, China, March 2018.

13. Conference Presentation, *Global Food Security: The Midwest Big Data Hub and the North American Plant Phenotyping Network*, with Panel Discussion on Big Data in Agriculture. North Central Regional Association Mini Land Grant Meeting: Driving Innovation as Land-Grant Universities, Purdue University, West Lafayette, IN, July 2017.

12. Conference Presentation, *Developing Data Science at UNL: Progress, Challenges, and Opportunities for Research*. Merrill Center for Advanced Studies Regional Research Retreat, Nebraska City, NE, July 2017.

11. Plenary Talk, *Digital Agriculture: The Midwest Big Data Hub and Global Food Security*. IASSIST 2017 Data in the Middle: The Common Language of Research, Annual Meeting of the International Association for Social Science Information Services and Technology, Lawrence, KS, May 2017.

10. Conference Presentation, *Melding STEM and Plant Sciences Towards Advanced Plant Phenotyping and Discovery*. Phenome2017, Tucson, AZ, February 2017.

9. Conference Presentation, *NSF Big Data Hubs, Digital Agriculture, and Plant Phenotyping*. Inaugural Meeting of the North American Plant Phenotyping Network, Purdue University, West Lafayette, IN, August 2016.

8. Conference Presentation, *NSF Big Data Hubs and Digital Agriculture*. Annual Meeting of the Arkansas/Missouri Plant Imaging Consortium, Fayetteville, AK, July 2016.

7. Conference Presentation, *The Midwest Big Data Hub Spoke in Digital Agriculture*(with Riedy, J., Monaco, G., and Coletti, J.). NSF Midwest Big Data Hub Annual All-Hands Meeting, Big Ten Conference Center, Chicago, IL, March 2016.

6. Keynote Speaker, United States Department of Agriculture Agricultural Research Service Big Data Workshop, *The Challenge of Big Data*. USDA George Washington Carver Center, Beltsville, MD, July 2015.

5. Conference Presentation, *A Bayes testing approach to metagenomic profiling in bacteria* (with Clarke, B., Valdes, C., and Dobra, A.). ICSA Annual Meeting, Colorado State University, Ft. Collins, CO, June 2015.

4. Keynote Speaker, The 6th Computational Biology-Biostatistics Workshop, Louisiana Biomedical Research Network. *Cancer Biostatistics: Turning Challenges Into Opportunities*. Louisiana Cancer Research Center, New Orleans, LA, February 2013.

3. Conference Presentation, *Dynamic Model Averaging in the Context of Prequential Prediction* (with Yu, C.-W. and Clarke, B.). Joint Statistical Meetings, Miami Beach, FL, August 2011.

2. Conference Presentation, *Issues in Bayesian tree modeling of clinico-genomic data* (with West, M.). International Workshop on Bayesian Data Analysis, Santa Cruz, CA, August 2003.

1. Conference Presentation, *Tree models for the exploration of microarray data* (with West, M.). C. Warren Neel Conference on Statistical Data Mining and Knowledge Discovery, University of Tennessee, Knoxville, Tennessee, June 2002.

Invited Presentations (Department/University)

16. Seminar, UNMC School of Public Health, *Stability as an Objective Criterion for Prior Selection (in Linear Models)*, University of Nebraska School of Medicine, December 8, 2023.

15. Seminar, NSF STEM CONNECT program, *Pathways and Careers in Quantitative Biology (and Data Science)*, Southeast Community College, October 10, 2023.
14. Seminar, Animal Science/Agronomy Genetics, *National and International Agricultural Genome-to-Phenome*, Department of Agronomy and Horticulture and Department of Animal Sciences, University of Nebraska-Lincoln, February 24, 2023.
13. Career Seminar, *From Introvert to Data Scientist in n+1 Steps*, Huck Graduate Student Advisory Committee, The Pennsylvania State University, December 2021.
12. Colloquium, *The Venn Diagram of Data Science*, Department of Mathematics, University of Nebraska-Lincoln, Lincoln, NE, February 2021.
11. Seminar, *Melding STEM and Plant Sciences Towards Advanced Plant Phenotyping and Discovery*. Plant Sciences Institute, Iowa State University, Ames, IA, April 2017.
10. Seminar, Department of Biostatistics, School of Public Health, *An Introduction to Big Data and Data Science: A Paradigm Shift for Statistics*. University of Nebraska Medical Center, Omaha, NE, December 2016.
9. Seminar, Division of Biostatistics, Department of Public Health Sciences, *A Current Perspective of Big Data and Statistical Prediction*. University of Miami, Miami, FL, January 2014.
8. Seminar, Center for Information Technology, National Institutes of Health, *Seeing the Forest for the Trees*. Bethesda, MD, September 2010.
7. Lecture, Center for Computational Sciences, University of Miami, *Cancer Biomarkers from a Bioinformatics Perspective*. Miami, FL, August 2010.
6. Seminar, Department of Mathematics and Statistics, Florida International University, *Median Loss Prediction* (with Yu, C.-W., and Clarke, B.), Miami, FL, April 2010.
5. Seminar, Stanley S. Scott Cancer Center, *Clinico-Genomics and Its Applications*, Louisiana State University Health Sciences Center, New Orleans, LA, September 2009.
4. Seminar, Fred Hutchinson Cancer Research Center, *Logic trees and SVMs for improved prediction from complex data* (with Seo, D.). Seattle,WA, February 2008.
3. Seminar, Department of Statistics, University of British Columbia, *An ensemble approach to improved prediction from multitype data* (with Seo, D.), Vancouver, BC, November 2007.
2. Seminar, *Issues in Bayesian tree modeling of clinico-genomic data*. Rosetta Inpharmatics, Seattle, WA, April 2005.
1. Seminar, *Genetic algorithms for optimal fitting of piecewise linear functions* (with C.A. Murthy). Machine Intelligence Unit, Indian Statistical Institute, Calcutta, India, March 1998.

Teaching Specialization

Curriculum Design and Instruction

Curricula development, NRES 891-008, Introduction to Interdisciplinary Science, NSF National Research Traineeship in Earth Observation Science in Society and Sustainability (EOS^3)

Core curricula and program design, PhD program in Complex Biosystems, University of Nebraska Lincoln. Includes *Big Questions in Life Sciences Research* (CBIO 841) and *Integrating Quantitative and Computational Biology into Life Sciences Research* (CBIO 842).

Workshops/ Short Courses

Workshop on Phenotyping, co-developed and presented with Filipe Matias Brul, Syngenta LATAM. Hosted by Universidade Federal de Minas Gerais (UFMG) in partnership with U.S. Department of State Professional Exchange Program, August 28-30, 2023.

Plant Phenotyping Workshop, Presenter on Statistics and Experimental Design, Phenome2018, Tucson, AZ, February 2018.

Workshop on Big Data, Annual meeting of the Snake River Chapter of the American Statistical Association, Idaho State University, Meridian, ID, May 2015.

Workshop, *Introduction to Bioinformatics and Genomic Analysis*. Computer Science Summer School, Notre-Dame University, Louaize, Beirut, Lebanon, July 2011.

Continuing Education Course, *Statistical Methods for Genome Wide Association Studies* (with Dobra, A.), Joint Statistical Meetings, Vancouver, CA, August 2010.

Course Instructor

Integrating Quantitative and Computational Biology into Life Sciences Research (CBIO 842), Interdisciplinary Doctoral Program in Complex Biosystems, University of Nebraska Lincoln, Spring 2022 - 2025.

Seminar in Complex Biosystems (CBIO 843), Interdisciplinary Doctoral Program in Complex Biosystems, University of Nebraska Lincoln, Fall 2024, Spring 2025.

Alpha Seminar (STAT 810), Department of Statistics, University of Nebraska Lincoln, Fall 2020.

Introduction to Interdisciplinary Science (NRES 891-008), School of Natural Resources and NSF NRT in EOS^3, University of Nebraska Lincoln, Fall 2018.

Statistics and Applications (MATH/STAT 380), Department of Statistics, University of Nebraska Lincoln, Fall 2017.

Integrating Quantitative and Computational Biology into Life Sciences Research (LIFE 891-002), Interdisciplinary Doctoral Program in Complex Biosystems, University of Nebraska Lincoln, Spring 2016-Spring 2021.

Data Mining and Machine Learning (STAT 983), Department of Statistics, University of Nebraska Lincoln, Spring 2017.

Advanced Graduate Seminar (FDST 951), Department of Food Science and Technology, University of Nebraska Lincoln, Spring 2015.

Medical Biostatistics I (EPH 501), Department of Epidemiology and Public Health, University of Miami, Fall 2011, Fall 2012.

Instructor, *Data Analysis/ Statistical Inference* (STA 101), Institute of Statistics and Decision Sciences, Duke University, Spring 2006.

Instructor, *Theory of Statistics* (STA 513), Department of Statistics, The Pennsylvania State University, Spring 1999.

Instructor, *Elementary Statistics* (STA 200), Department of Statistics, The Pennsylvania State University, Spring 1997, Summer 1997.

Instructor, *Applied Multivariate Statistical Analysis* (STA 505), Department of Statistics, The Pennsylvania State University, Spring 1996.

Instructor, *Engineering Statistics and Quality Control* (36-220), Department of Statistics, Carnegie Mellon University, Summer 1994.

Course Modules Taught

Big Questions in Life Sciences Research (LIFE 891-001), Interdisciplinary Doctoral Program in Complex Biosystems, University of Nebraska Lincoln, Fall 2015; Fall 2016; Fall 2017.

Practical Bioinformatics (PIBS 602), Graduate Program in Biomedical Sciences, University of Miami, Spring 2011.

Molecular and Genetic Epidemiology (EPH 625), Department of Epidemiology and Public Health, University of Miami, Spring 2010.

Special Topics: Research Topics in Public Health (EPH 584), Department of Epidemiology and Public Health, University of Miami, Fall 2009.

Statistical Analysis of Gene Expression (CRP 256), Department of Biostatistics and Bioinformatics, Duke University, Fall 2005.