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**WORK EXPERIENCE**

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- **UNC Chapel Hill Department of Biostatistics** Chapel Hill, NC  
*Postdoctoral Research Associate, supervised by Didong Li* May 2023 - present
- **Broad Institute of MIT and Harvard** Cambridge, MA  
*Associate Computational Biologist I - II* Sep 2015 - Jul 2018
  - **Cancer Data Science:** Used statistical learning methods to find links between cancer genomics and treatment response in CRISPR knockout screens. Formulated modified mixed effects model and built optimizer to correct for variable sensitivity to cutting-induced DNA damage. Maintained team R package.
  - **PRISM:** Lead quality control and interpretation of data from the PRISM high-throughput screening technology. Wrote software to automate tailored analyses for scientists who submitted compounds to quarterly screens. Presented hypotheses regarding compound mechanism of action to collaborators in industry and academia.
  - **Vice Chair, Project Brooklyn:** Recruited to task-force charged with reforming laboratory and office space management. Partnered with Brightspot Strategy to design prototypes of new library and co-working spaces. Reported findings and made recommendations to Executive Leadership Team at Broad.

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**EDUCATION**

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- **Duke University** Durham, NC  
*Ph.D. in Statistics, advised by Peter Hoff; Certificate in Slavic Studies* Sep 2018 – May 2023
- **Stanford University** Stanford, CA  
*B.S. in Mathematics with Honors in the Arts* Sep 2011 – Jun 2015

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**PREPRINTS**

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- **Bryan, J.G.**, Niu, H., Li, D. (2025) “Incorporating LLM-Derived Information into Hypothesis Testing for Genomics Applications.” *Under review at the Journal of the American Statistical Association.*
- **Bryan, J.G.**, Zhou, H., Li, D. (2024) “A compromise criterion for weighted least squares estimates.” <https://arxiv.org/abs/2404.00753>.
- **Bryan, J.G.**, Niles-Weed, J., Hoff P.D. (2022) “The multirank likelihood for semiparametric canonical correlation analysis.” *Revision under review at the Journal of Multivariate Analysis*, <https://arxiv.org/abs/2112.07465>

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**PUBLICATIONS**

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- **Bryan, J.G.**, Hoff P.D., Osburn, C.L. (2024) “Linear source apportionment using generalized least squares.” *Technometrics*.
- **Bryan, J.G.**, Li, D. (2024) “Comments on Contemporary Uses of Machine Learning for Electronic Health Records.” *North Carolina Medical Journal*.
- **Bryan, J.G.**, Hoff P.D., Osburn C.L. (2023) “Routine estimation of dissolved organic matter sources using fluorescence data and linear least squares.” *ACS ES&T Water*.
- de Matos Simoes, R., Shirasaki, R. [& 39 others including **Bryan, J.G.**]. (2023) “Genome-scale functional genomics identify genes preferentially essential for multiple myeloma cells compared to other neoplasias.” *Nature Cancer*.
- **Bryan, J.G.**, Hoff, P.D. (2021) “Smaller  $p$ -values in genomics studies using distilled auxiliary information.” *Biostatistics*.
- Sheffer, M., Lowry, E. [& 29 others including **Bryan, J.G.**]. (2021) “Genome-scale screens identify factors regulating tumor cell responses to natural killer cells.” *Nature Genetics*.
- **Bryan, J.G.**, Mandan, A. [& 8 others]. (2021) “Likelihood ratio statistics for gene set enrichment in Alzheimer’s disease pathways.” *Alzheimer’s & Dementia*.
- Dhimolea, E., Simoes, R.D.M. [& 29 others including **Bryan, J.G.**]. (2021) “An Embryonic Diapause-like Adaptation with Suppressed Myc Activity Enables Tumor Treatment Persistence.” *Cancer Cell*.
- Wu, J., **Bryan, J. G.** [& 10 others]. (2020) “Opportunities and Challenges for Analyzing Cancer Data at the Inter- and Intra-Institutional Levels.” *JCO Precision Oncology*.
- Corsello, S.M., Nagari, R.T. [& 35 others including **Bryan, J.G.**]. (2020) “Discovering the anticancer potential of non-oncology drugs by systematic viability profiling.” *Nature Cancer*.

- McFarland, J.M., Ho, Z.V. [& 12 others including **Bryan, J.G.**]. (2018) “Improved Estimation of Cancer Dependencies from Large-Scale RNAi Screens Using Model-Based Normalization and Data Integration.” *Nature Communications*.
- Gray, S.W., Gagan, J. [& 12 others including **Bryan, J.G.**]. (2018) “Interactive or static reports to guide clinical interpretation of cancer genomics.” *Journal of the American Medical Informatics Association*.
- Meyers, R.M., **Bryan, J.G.** [& 29 others]. (2017) “Computational correction of copy-number effect improves specificity of CRISPR-Cas9 essentiality screens in cancer cells.” *Nature Genetics*.
- Mackey, L., **Bryan, J.G.** & Mo, M.Y. (2015) “Weighted Classification Cascades for Optimizing Discovery Significance in the HiggsML Challenge.” *Journal of Machine Learning Research, Workshop and Conference Proceedings*.

## ADDITIONAL RESEARCH EXPERIENCE

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- **Duke Molecular Physiology Institute (DMPI)** Durham, NC  
*Statistician in Residence* *Jun 2022 - Jun 2023*
  - **Office hours:** Held weekly office hours for scientists at DMPI. Assisted with data processing in R and advised practitioners on use of statistical methodologies in research.
- **American Statistical Association** Alexandria, VA  
*Research Intern* *May 2021 - Aug 2021*
  - **State of the federal workplace:** Gathered payroll and employee survey data from federal and third-party websites. Ran regression models and applied dimension reduction techniques to interpret the relationship between payroll statistics and employee satisfaction.
- **Stanford University Department of Statistics** Stanford, CA  
*Research Assistant* *Jun 2014 - Aug 2014*
  - **Kaggle prediction challenge:** Competed in the HiggsML challenge with the objective of classifying particle decay based on data simulated from the Large Hadron Collider at CERN.

## TEACHING & MENTORSHIP

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- **Instructor at UNC Chapel Hill:**
  - **BIOS 889: Preparation for Research in Biostatistics:** Developing a new 1-credit course for UNC Chapel Hill Biostatistics PhD students. Through statistical simulations, oral presentations, and written reports, students will reproduce the primary results of a statistical article of their choosing (Spring 2025)
- **Student mentor:**
  - **Yueen Ma:** Working with UNC undergraduate student Yueen Ma to develop an algorithm to compute non-negative total least squares estimates (present)
  - **Ziyang Ding:** Provided research guidance to Duke undergraduate student Ziyang Ding on the project “Using prior information to boost power in correlation structure support recovery,” <https://arxiv.org/pdf/2111.11278>.
- **Head teaching assistant and lab instructor at Duke University:**
  - **STA 199:** Introduction to Data Science (2022)
  - **STA 360/601:** Bayesian Inference and Modern Statistical Methods (2019-2020)
  - **STA 101:** Data Analysis and Statistical Inference (2018)
- **Teaching assistant and lab instructor at Duke University:**
  - **STA 521:** Predictive Modeling and Statistical Learning (2021)
  - **STA 325:** Machine Learning and Data Mining (2020)
  - **STA 490/690:** History of Bayesian Statistics (2019)

## ACADEMIC SERVICE

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- **j-ISBA board member:** Serving as Secretary for the junior section of the International Society for Bayesian Analysis. Developing a collaborative challenge for j-ISBA members and organizing conference sessions (2024-present).
- **Statistics translator:** Joined collaborative effort organized by The Society for Imprecise Probabilities: Theories and Applications to translate V.P. Kuznetsov’s *Interval Statistical Models* from Russian to English (2022-present).
- **GCC Co-Chair:** Served on Duke Statistical Science Graduate Consultative Committee (2019-2020, 2022-2023).
- **Journal review:** Annals of Applied Statistics (AOAS), Nature Scientific Reports, Alzheimer’s & Dementia, Statistical Papers, Statistics and Its Interface, Journal of Statistical Theory and Practice.

## PRESENTATIONS & POSTERS

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- “Applying least squares principles to estimating sources of contamination in the Neuse River basin.” *Invited talk at Penn State University SMAC seminar*, University Park, PA. October 18th, 2024.
- “A compromise criterion for weighted least squares.” *Contributed talk at Joint Statistical Meetings*, Portland, OR. August 5, 2024.
- “A compromise criterion for weighted least squares.” *Poster presented at the World Meeting of the International Society for Bayesian Analysis*, Venice, Italy. July 1, 2024.
- “Applying least squares principles to estimating sources of contamination in the Neuse River basin.” *Webinar for the North Carolina Chapter of the American Statistical Association.*, Online, April 9th, 2024.
- “Least squares principles for the source apportionment problem.” *Invited talk at CMStatistics*, Berlin, Germany. December 17th, 2023.
- “Least squares principles for the source apportionment problem.” *Invited talk at TUM*, Munich, Germany. November 6th, 2023.
- “Incompleteness and the Underground.” *Paper presented at the meeting of the International Dostoevsky Society*, Nagoya, Japan. August 28, 2023.
- “The multirank likelihood for semiparametric CCA.” *Contributed talk at BNP Networking Event*, Nicosia, Cyprus. April 27, 2022.
- “The multirank likelihood for semiparametric CCA.” *Invited talk at CFE-CMStatistics*, Online. December 19th, 2021.
- “Nonparametric empirical Bayes estimation using entropic optimal transport.” *Speed session talk at Joint Statistical Meetings*, Online. August 12th, 2021.
- “Smaller  $p$ -Values in Genomics Studies Using Distilled Auxilliary Information.” *Contributed talk at the World Meeting of the International Society for Bayesian Analysis*, Online. June 28th, 2021.
- “Smaller  $p$ -Values in Genomics Studies Using Distilled Historical Information.” *Contributed talk at Joint Statistical Meetings*, Online. August 3rd, 2020.
- “Incompleteness and the Underground.” *Paper presented at the 2nd Annual Duke-Stanford Graduate Conference*, Durham, NC. April 6, 2019.
- “Incompleteness and the Underground.” *Paper presented at the 57th Annual Southern Conference on Slavic Studies*, Mobile, AL. March 15, 2019.
- “CERES: A New Approach to Correct for Copy Number in CRISPR-Cas9 Screens.” *CTD<sup>2</sup> D-HIP Webinar Series*. CTD<sup>2</sup> Network. July 12, 2018.
- “CERES—A model for inferring genetic dependencies in cancer cell lines from CRISPR knockout screens.” *Meeting on Biological Data Science*. Cold Spring Harbor Laboratory. October 26, 2016.

## AWARDS

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| Danish Data Science Academy, Visit Grant (2023) | Stanford Wrestling, Coaches Award (2015)        |
| ISBA, Graduate Student Travel Award (2022)      | Rhodes Scholarship Finalist, District 16 (2014) |
| BNP Networking Event, Travel Grant (2022)       | Stanford Wrestling, Todd Surmon Award (2012)    |
| Duke University, GSTEG Summer Grant (2021)      | Stanford Wrestling, Coaches Award (2012)        |