PEDRO L. BALDONI

pedrobaldoni [at] gmail.com ◇ https://plbaldoni.rbind.io
Department of Biostatistics, University of North Carolina at Chapel Hill
135 Dauer Dr, Chapel Hill, NC 27599

EDUCATION

Ph.D., Biostatistics *2020*
Department of Biostatistics
University of North Carolina at Chapel Hill, USA
Advisors: Dr. Naim U. Rashid, Dr. Joseph G. Ibrahim
Committee: Dr. Michael I. Love, Dr. Yun Li, and Dr. Douglas Phanstiel
Research area: Epigenomics, ChIP-seq, Mixed Models, Mixture Models.

M.S., Statistics *2014*
Department of Statistics
University of Campinas, Brazil
Advisor: Dr. Hildete P. Pinheiro
International exchange program: Aarhus University, Denmark (August/2013 - February/2014)
Link to thesis: http://repositorio.unicamp.br/jspui/handle/REPOSIP/307180

B.S., Statistics *2011*
Department of Statistics
University of Campinas, Brazil

PROFESSIONAL POSITIONS

Postdoctoral Fellow *July 15, 2020 - present*
Walter and Eliza Hall Institute of Medical Research, Australia

· Bioinformatics Division & Colonial Foundation Healthy Ageing Centre
Supervisors: Professor Gordon K. Smyth, Associate Professor Andrew I. Webb

Statistician (Graduate Research Assistant) *February 1, 2015 - June 30,2020*
University of North Carolina at Chapel Hill, United States

· University Cancer Research Fund *August 19, 2019 - June 30, 2020*
Supervisor: Dr. Joseph G. Ibrahim

· Collaborative Studies Coordinating Center *December 1, 2015 - August 18, 2019*
Supervisors: Dr. Jianwen Cai, Dr. Daniela Sotres-Alvarez

· Center for AIDS Research (CFAR) *February 1, 2015 - December 31, 2015*
Supervisor: Dr. Michael G. Hudgens

Statistician *January 2, 2012 - June 30, 2012*
CPqD Foundation, Brazil

PROFESSIONAL AND EDITORIAL ACTIVITIES

Professional Memberships

· Australian Bioinformatics and Computational Biology Society (ABACBS), 2020 - present

· American Statistical Association (ASA), 2018 - present

· Eastern North American Region (ENAR), 2017 - present

Program Development

· Session Chair, Eastern North American Region (ENAR), 2019. Topic: Replicability in Big Data Precision Medicine.

Peer Review Activities

· Journal Referee: Nucleic Acids Research.

HONORS, AWARDS, SCHOLARSHIPS

· University Cancer Research Fund Award - Lineberger Comprehensive Cancer Center, University of North Carolina at Chapel Hill (2019-2020)

· Max Halperin Award (Excellence in graduate studies) - Department of Biostatistics, University of North Carolina at Chapel Hill (2016)

· Science Without Borders (Full Ph.D. program) - CAPES, Brazil (2014-2018)

· International Exchange Program (Aarhus University, Denmark) - Santander Bank (2013-2014)

· CAPES Scholarship (Full MS program) - University of Campinas, Brazil (2012-2014)

PEER-REVIEWED PUBLICATIONS

1. **Baldoni, P. L.**, Sotres-Alvarez, D., Lumley, T., & Shaw, P.A.. On the use of Regression Calibration in a Complex Survey Design with Application to the Hispanic Community Health Study/Study of Latinos. *American Journal of Epidemiology (in press)*

2. Kaplan, R., **Baldoni, P.L.**, Strizich, G.M., Perez-Stable, E.J., Saccone, N.L., Peralta, C.A., Perreira, K.M., Gellman, M.D., Williams-Nguyen, J., Rodriguez, C., Lee, D.J., Daviglus, M., Talavera, G.A., Lash, J.P., Cai, J. & Franceschini, N.. Current smoking raises risk of incident hypertension: Hispanic Community Health Study – Study of Latinos. *American Journal of Hypertension (in press)*

3. Elfassy T., Zeki Al Hazzouri A., Cai J., **Baldoni P. L.**, Llabre M., Rundek T., Raij L., Lash J., Talavera G. A., Wasserthiel-Smoller S., Daviglus M., Booth J. N. III, Castaneda S., Garcia M., & Schneiderman N.. Incidence of hypertension among US Hispanic/Latinos: the Hispanic Community Health Study/Study of Latinos, 2008-2017. 2020. *Journal of the American Heart Association*. https://doi.org/10.1161/JAHA.119.015031

4. Mollan, K. R., Trumble, I. M., Reifeis, S. A., Ferrer, O., Bay, C. P., **Baldoni, P. L.**, & Hudgens, M. G. (2020). Precise and accurate power of the rank-sum test for a continuous outcome. *Journal of Biopharmaceutical Statistics*. https://doi.org/10.1080/10543406.2020.1730866

5. **Baldoni, P. L.**, Rashid, N. U., & Ibrahim, J. G. (2019). Improved Detection of Epigenomic Marks With Mixed Effects Hidden Markov Models. *Biometrics*, 75 (4): 1401–13. https://doi.org/10.1111/biom.13083

6. Trumble, I. M., Allmon, A. G., Archin, N. M., Rigdon, J., Francis, O., **Baldoni, P. L.**, & Hudgens, M. G. (2017). SLDAssay: a software package and web tool for analyzing limiting dilution assays. *Journal of immunological methods*, 450, 10-16., 450, pp.10-16. https://doi.org/10.1016/j.jim.2017.07.004

7. Lee, S. K., Zhou, S., **Baldoni, P. L.**, Spielvogel, E., Archin, N. M., Hudgens, M. G., ... & Swanstrom, R. (2017). Quantification of the latent HIV-1 reservoir using ultra deep sequencing and primer ID in a viral outgrowth assay. *Journal of acquired immune deficiency syndromes* (1999), 74(2), 221. https://doi.org/10.1097/QAI.0000000000001187

8. Clutton, G., Xu, Y., **Baldoni, P. L.**, Mollan, K. R., Kirchherr, J., Newhard, W., ... & Archin, N. (2016). The differential short-and long-term effects of HIV-1 latency-reversing agents on T cell function. *Scientific reports*, 6, 30749., 6. https://doi.org/10.1038/srep30749

SUBMITTED MANUSCRIPTS

1. **Baldoni, P. L.**, Rashid, N.U., & Ibrahim, J.G.. Efficient Detection and Classification of Epigenomic Changes Under Multiple Conditions. *Biometrics (under review)*. https://www.biorxiv.org/content/10.1101/864124v2

WORKING MANUSCRIPTS

1. **Baldoni, P. L.**, Rashid, N.U., & Ibrahim, J.G.. Single-cell ChIP- and ATAC-seq Modeling via Deep Learning Variational Autoencoder.

2. Cai, J., Zeng, D., Butera, N.M., **Baldoni, P. L.**, Maitra, P., & Dong, L.. Comparisons of Statistical Methods for Handling Attrition in Longitudinal Studies with Complex Survey Sampling.

3. Liese, A.D., Kaplan, R., Qi, Q., Thrasher, J.F., Sutherland, M.W., Lee, D.J., Thyagarajan, B., Talavera, G.A., **Baldoni, P. L.**, & Cai, J.. Effects of smoking and smoking cessation on incidence of diabetes in Hispanic/Latino populations in the US: Results from the Hispanic Community Health Study/Study of Latinos(HCHS/SOL).

PUBLICLY AVAILABLE SOFTWARE

1. **mixNBHMM**: detection and classification of differential enrichment regions from ChIP-seq experiments under multiple conditions https://github.com/plbaldoni/mixNBHMM

2. **ZIMHMM**: detection of broad enrichment regions from multiple ChIP-seq experimental replicates via a zero inflated mixed effects hidden Markov model https://github.com/plbaldoni/ZIMHMM

PRESENTATIONS

Scientific Meetings (Contributed)

· Efficient Detection and Classification of Epigenomic Changes Under Multiple Conditions, *Eastern North American Region (ENAR)*, March, 2020.

· Detection and Classification of Changes in Protein-DNA Binding Activity With Applications in Diffuse ChIP-seq Data, *Joint Statistical Meetings (JSM)*, July, 2019.

· Integrative HMM With Mixture Model for Differential Pattern Detection of Broad Epigenomic Marks, *Eastern North American Region (ENAR)*, March, 2019.

· Improved Detection of Epigenomic Marks With Mixed Effects Hidden Markov Models, *Eastern North American Region (ENAR)*, March, 2018.

· A Statistical Method for the Analysis of Multiple ChIP-seq Datasets, *Eastern North American Region (ENAR)*, March, 2017.

Scientific Meetings (Poster)

· epigraHMM - Epigenomic r-based analysis with hidden Markov models, *Bioconductor Conference (BioC)*, July, 2020.

· A Statistical Method for the Analysis of Multiple ChIP-seq Datasets, *Joint Statistical Meetings (JSM)*, July, 2017.

Invited Talks

· Laboratory for Statistical and Translational Genomics, *University of Pennsylvania*, January, 2020.

Other Meetings and Events

· Efficient Detection of Epigenomic Changes Under Multiple Conditions and Single-cell Applications, *School of Medicine, University of North Carolina at Chapel Hill*, April, 2020.

· On the use of Regression Calibration in a Complex Survey Design with Application to the Hispanic Community Health Study/Study of Latinos, *Collaborative Studies Coordinating Center, University of North Carolina at Chapel Hill*, November, 2019.

· Statistical Strategies for the Analysis of Diet-Disease Models that Correct for Error-Prone Exposures, *Collaborative Studies Coordinating Center, University of North Carolina at Chapel Hill*, May, 2010.

· Calculating and Comparing Age Standardized Cumulative Incidence of Hypertension across Hispanic/Latino Background Groups, *Collaborative Studies Coordinating Center, University of North Carolina at Chapel Hill*, April, 2019.

· Statistical methods for HIV-1 reservoir estimation in viral outgrowth assays, *Center for AIDS Research (CFAR), UNC Gillings School of Public Health*, June, 2016.

TEACHING EXPERIENCE

Recitation Lecturer
Department of Biostatistics, The University of North Carolina at Chapel Hill
BIOS 545 - Principles of Experimental Analysis (2016, Undergraduate level class)

Teaching Assistant
Department of Biostatistics, The University of North Carolina at Chapel Hill
BIOS 680 - Introductory Survivorship Analysis (2018, MS level class)
BIOS 735 - Introduction to Statistical Computing (2019, 2020, PhD level class)

Department of Statistics, University of Campinas, Brazil
ME607 - Time Series (2013, Undergraduate level class)

SKILLS AND SERVICE

· Computing skills: proficient in R, C++, and SAS.

· Languages: Portuguese (native speaker), English, and Italian.