

Busola Sanusi

Education

- 2014–Present **Ph.D. Biostatistics**, *University of North Carolina*, Chapel Hill, NC.
(May 2020) Co-Advisors: Dr. Michael Hudgens and Dr. Jianwen Cai.
Dissertation Title: Statistical Methods for Marked Survival Data in the Presence of Dependent Censoring.
- 2011–2013 **M.A. Mathematics**, *Central Michigan University*, Mount Pleasant, MI.
Concentration in Statistics.
- 2006–2010 **B.Sc. Mathematics & Statistics**, *University of Lagos*, Nigeria.
First Class Honors. Best Graduating Student, Faculty of Science (Rank: 1/~530).

Experience

- 2014–Present **Graduate Research Associate and Biostatistician**, *Lineberger Comprehensive Cancer Center (LCCC)*, *University of North Carolina*, Chapel Hill, NC.
Supervisor: Dr. Jennifer Smith, UNC Dept of Epidemiology.
- Provided biostatistical consultation for study design and data analysis for research investigators in collaboration with UNC Center for AIDS Research - Biostatistics Core.
 - Performed data cleaning and analysis, generated polished reports & tables using SAS & R.
 - Reviewed abstracts and manuscripts of statistical publications.
 - Provides statistical input to publications, author in four published, two submitted, and six ongoing manuscripts on randomized clinical trials for the prevalence and optimal treatment procedure of Human Papillomavirus (HPV).
 - Prepared Statistical Analysis Plan (SAP) for major NIH R01 grant application.
 - Guest Lecturer for EPID 760 - Statistical Considerations for Vaccine Efficacy and Effectiveness.
 - Gave an outstanding oral presentation at the 30th International Papillomavirus Conference and Clinical & Public Health Workshops, Lisbon, Portugal (HPV 2015) and poster presentations at the UNC 2015 Global Oncology Conference and the 2016 EUROGIN conference in Austria.
- May 2017 **Biostatistics PhD Research Intern**, *Takeda Oncology*, Cambridge, MA.
- Aug 2017 Advisor: Dr. Godwin Yung
- Project Title: Measuring Treatment Efficacy in Mixture of Subgroups.
 - Helped propose a general framework to study the behavior of Cox proportional hazards model.
 - Derived theoretical results to help identify the non-collapsibility of the hazard ratio.
 - Performed extensive, realistic clinical trial simulations by writing computationally efficient and advance code using R package dplyr and programming/statistical techniques such as numerical integration, recursive functioning, and inverse transform scaling.
 - Gave a final 30 minutes presentation to a group of about 100 Statisticians.
 - Collaborated on a paper based on our results, which I presented at JSM 2019.
- May 2016 **Biostatistics PhD Research Intern**, *Merck Pharmaceuticals*, Upper Gwynedd, PA.
- Aug 2016 Advisor: Dr. Kenneth Liu
- Project Title: A Modified LOCF Method with Multiple Imputation for Handling Missing Data in Longitudinal Studies.
 - Performed simulation study on a multivariate normal data to compare repeated measures mixed model, Last Observation Carried Forward, Jump to control, & “modified LOCF”.
 - Developed a novel multiple imputation method, “modified LOCF”, that extends missing imputation mechanism by the addition of variability.
 - Collaborated on a paper based on our results, which I presented at JSM 2017.

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- May 2015 **Statistical Consultant**, *The Odum Institute, University of North Carolina*, NC.
- Aug 2015
 - Provided ad hoc statistics consulting to students, staff and faculty.
 - Areas of assistance include SAS, R, OLS, GLM, Logistic Regression, & Data Analysis.
- Aug 2014 **Graduate Teaching Instructor**, *University of North Carolina*, Chapel Hill, NC.
- May 2015
 - BIOS 600 Instructor: Principles of Statistical Inference for graduate students in the Gillings School of Public Health.
 - Taught laboratory and review sessions.
 - Assisted with R and SAS statistical programming languages.
- Aug 2011 **Graduate Teaching Assistant**, *Central Michigan University*, Mount Pleasant, MI.
- Jul 2014
 - Taught Intermediate College Algebra & Pre-calculus: about 450 students in six semesters.
 - Worked as an instructor at the Mathematics/Statistics Assistant Center (MAC).
 - My teaching ratings can be seen here: [Busola Sanusi - Rate My Professor](#).

Research, Skills & Tools

Research Survival Analysis, Marked Processes, Clinical Trials, Missing Data, Causal Inference.

Public Health HPV, HIV/AIDS, Cervical Cancer, Depression Study.

Programming SAS, R.

Visualization R (ggplot2, ggvis), \LaTeX .

Communication Delivered professional presentations in conferences & seminars.

Certification SAS Certified Base Programmer for SAS 9, License BP046599v9.

Fellowships, Scholarships & Awards

- 2019 Paliwal Club of 100 Scholarship for Women in S.T.E.A.M.
- 2019 American Statistical Association Biopharmaceutical Section Scholarship Award.
- 2019 Lifetime Data Science Conference Student Poster Award.
- 2019 JSM Diversity Travel Scholarship Award (\$1000).
- 2015-2018 Schlumberger Foundation Faculty For The Future Fellowship (\$150,000).
- 2018 Nominated to Sigma Xi - The Scientific Research Society.
- 2018 ENAR/NIH Fostering Diversity in Biostatistics Travel Scholarship (\$800).
- 2016 Best Abstract Award, 3rd Southern African HIV Clinicians Society Conference.
- 2015 UNC Biostatistics Department Travel Award (\$750).
- 2014-2015 John and Diane Fryer UNC Biostatistics Fellowship (\$8000).
- 2013 Outstanding Graduate Teaching Assistant Award, CMU.
- 2011 Vice-Chancellor's Prize For Best All Round Performance In The Faculty, UNILAG.
- 2011 Faculty of Science Award For Best Graduating Student, UNILAG.
- 2011 Department of Mathematics Award For Best Graduating Student, UNILAG.
- 2011 National School Fund Prize For Best Student, UNILAG.
- 2011 Wilfred Ighodare Prize For The Best Graduating Student In The Faculty.
- 2011 Gocuz Group Ltd. Prize For Best Graduating Student In Science, UNILAG.
- 2007-2010 University of Lagos Outstanding Scholars' Award (\$300/year).

Publications

- [1] Smith J.S.; Sanusi B.; Swarts A.; Faesen M.; Levin S.; Goeieman B.; Ramotshela S.; Rakhombe N.; Williamson A.; Michelow P.; Omar T.; Hudgens M.; and Firnhaber C. *A Randomized Clinical Trial Comparing Cervical Dysplasia Treatment With Cryotherapy Versus LEEP In HIV-Seropositive Women From Johannesburg, South Africa*. *Am J Obstet Gynecol* 2017; 217: 183.e1-11.
- [2] Lince-Deroche N.; van Rensburg C.; Roseleur J.; Sanusi B.; Phirri J.; Michelow P.; Smith J.S. and Firnhaber C. *Costs and cost-effectiveness of LEEP versus cryotherapy for treating cervical dysplasia among HIV-positive women in Johannesburg, South Africa*. *PLoS ONE*. 2018 Oct 11; 13(10): e0203921. PMID: 30308014.
- [3] Sweet K.*; Bosire C.*; Sanusi B.*; Sherrod C. J.; Kwatampora J.; Waweru W.; Mugo N.; Kimani J.; Ting J.; Clark J.; Dittmer D and Smith J.S. *Prevalence and Natural History of HPV types in Female Sex Workers from Nairobi, Kenya*. *International Journal of STD & AIDS*. 2020 Jan 16; 31(2), 109–118. <https://doi.org/10.1177/0956462419884454>
*Joint First Authors.
- [4] Vielot N.A.; Islam J.; Sanusi B.; Myers J.S.; Smith S.B.; Meadows B.; Brewer N. and Smith J.S. *Overcoming Barriers to Adolescent Vaccination: Vaccine Champions Perspective*. Submitted to *Women and Health*, 2019.
- [5] Rahangdale L.; Rohner. E; Sanusi B.; Knittel A.; Vaughan L.; Chesko K.; Faherty B.; Tulenko S.; Schmitt J. W.; Romocki L.; Sivaram V.; Nelson J.; and Smith J.S. *Test accuracy of human papillomavirus in urine for detection of cervical intra-epithelial neoplasia*. *Journal of Clinical Microbiology*. 2020 Feb 24;58(3). pii: e01443-19. doi: 10.1128/JCM.01443-19.
- [6] Sanusi B.; Hudgens M.G.; Cai J. *Nonparametric Estimation of Marked Survival Data in the Presence of Dependent Censoring*. In Preparation for Submission to *Biometrics*, 2020.
- [7] Des Marais A.; Gupta L.; Sanusi B.; Brewer N. T.; Richman A.; Barclay L.; Smith J. S. *Attitudes towards and reactions to phone delivery of human papillomavirus self-collection results among women infrequently screened for cervical cancer*. Submitted to *Journal of Epidemiology & Community Health*, 2019.
- [8] Sanusi B.; Hudgens M.G.; Cai J. *Nonparametric Two-Sample Tests of the Mark-specific Hazard Function With Dependent Censoring*. In Preparation, 2020.
- [9] Sanusi B.; Hudgens M.G.; Cai J. *Mark-specific Proportional Hazards Models With Dependent Censoring*. In Preparation, 2020.
- [10] Sanusi B.; Liu K. and Golm G. *A Modified LOCF-PMM Method with Multiple Imputation for Handling Missing Data in Longitudinal Studies*. In Preparation, 2020.
- [11] Sanusi B. and Yung G. *Measuring Treatment Efficacy in Mixture of Subgroups*. In Preparation, 2020.
- [12] Rohner E.; Edelman C.; Schmitt J.; Sanusi B.; Schmitt J.; Romocki L.S.; Sivaraman V.; Nelson J.; O'Connor S.; Hudgens M.G.; Knittel A.; Rahangdale L.; Smith J.S. *Extended HPV genotyping: Comparing HPV type-distribution in self and provider-collected samples*. In Preparation, 2020.

Presentations

- [1] Sanusi B. *Nonparametric Estimation of Marked Survival Data in the Presence of Dependent Censoring*. ENAR Spring Meeting, Nashville, TN (March 2020).
- [2] Sanusi B. *Nonparametric Estimation of Marked Survival Data in the Presence of Dependent Censoring*. UNC Biostatistics 70th Anniversary Celebration, Chapel Hill, NC (Oct 2019). Invited Speaker.
- [3] Sanusi B.; Yung G. and Liu Y. *Non-Collapsibility of Hazard Ratio*. Joint Statistical Meeting, Denver, CO (July 2019).
- [4] Sanusi B.; Cai J. and Hudgens M. *Nonparametric Estimation Marked Survival Data in the Presence of Dependent Censoring*. Life Data Science Conference, Pittsburgh, PA (May 2019).
- [5] Sanusi B.; Cai J. and Hudgens M. *Nonparametric Estimation of Marked Survival Data in the Presence of Dependent Censoring*. ENAR Spring Meeting, Philadelphia, PA (March 2019).
- [6] Sanusi B.; Liu K. and Golm G. *A Modified LOCF-PMM Method with Multiple Imputation for Handling Missing Data in Longitudinal Studies*. Joint Statistical Meeting, Baltimore, MA (July 2017).
- [7] Sanusi B. *Applications of Statistics in Biomedical Research: From Missing Data in Depression Study to Optimal Treatment of Cervical Cancer*. University of Lagos Department of Mathematics and Statistics Seminar Series (May 2017). Invited.
- [8] Sanusi B. and Akinfaderin A. *Opportunities for Graduate Students in Mathematics and Statistics in the USA*. University of Lagos Department of Mathematics and Statistics Seminar Series (May 2017). Invited.
- [9] Sanusi B.; Smith S.B.; Meadows B.; Yinghao P.; Myers J.S. and Smith J.S. *Overcoming barriers to adolescent vaccination: Vaccine Champions perspective*. European Research Organisation on Genital Infection and Neoplasia Conference, Salzburg, Austria (June 2016).
- [10] Sanusi B.; Smith J.S.; Swarts A.; Faesen M.; Levin S.; Goeieman B.; Ramotshela S.; Rakhombe N.; Williamson A.; Michelow P.; Omar T.; Hudgens M.; and Firnhaber C. *A Randomized Clinical Trial Comparing Cervical Dysplasia Treatment With Cryotherapy Versus Leep In HIV-Seropositive Women From Johannesburg, South Africa*. 30th International Papillomavirus Conference and Clinical & Public Health Workshops, Lisbon, Portugal (September 2015).

Press Coverage

- [1] UNC - American Statistical Association Biopharmaceutical Section Award
- [2] Association of Schools and Programs of Public Health - Member Research and Report
- [3] UNC Gillings School of Public Health - Spotlight on Scholarship Recipient
- [4] UNC Gillings School of Public Health - Publication Press Release
- [5] UNC Global - Schlumberger Fellowship Press Release
- [6] Central Michigan University - Outstanding Teaching Assistant Award

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Membership in Professional Associations

2018–Present Sigma Xi - The Scientific Research Society
2017–Present International Biometric Society
2015–Present International Papillomavirus Society
2014–Present American Statistical Society