

Bernard Oguna Omolo

Work Address

Division of Mathematics & Computer Science
University of South Carolina–Upstate
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Home Address

508 Kennet Court
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EDUCATION & TRAINING

- Texas Tech University** Lubbock, TX 1999–2004
Ph.D.(Mathematical Statistics), Dept. of Mathematics & Statistics
- Egerton University** Njoro, KE 1991–1994
M.S.(Statistics), Dept. of Mathematics.
- Egerton University** Njoro, KE 1987–1990
B.S.(Mathematics), Dept. of Mathematics.
- University of North Carolina - Chapel Hill** Chapel Hill, NC 2009–2011
Postdoctoral Research Associate, Dept. of Biostatistics

ACADEMIC APPOINTMENTS

- University of South Carolina–Upstate** Spartanburg, SC 2016–Present
Professor, Div. of Math & Computer Science
- University of South Carolina–Upstate** Spartanburg, SC 2010–2016
Associate Professor, Div. of Math & Computer Science
- University of South Carolina–Upstate** Spartanburg, SC 2004–2010
Assistant Professor, Div. of Math & Computer Science
- Texas Tech University** Lubbock, TX 1999–2004
Graduate Part-time Instructor, Dept. of Mathematics & Statistics
- Egerton University** Njoro, KE 1999–2004
Lecturer, Dept. of Mathematics
- Egerton University** Njoro, KE 1994–1999
Assistant Lecturer, Dept. of Mathematics
- Egerton University** Njoro, KE 1990–1994
Teaching Assistant, Dept. of Mathematics

VISITING POSITIONS

- University of the Witwatersrand** Johannesburg, South Africa 2017–2020
Visiting Associate Professor, School of Public Health
- University of South Africa** Johannesburg, South Africa 2017
Visiting Fellow, Department of Statistics
- Swiss Institute of Bioinformatics (SIB)** Lausanne, CH 2016
Visiting Scientist
- Statistical and Mathematical Sciences Institute (SAMSI)** RTP, NC 2011
Visiting Research Fellow
- Strathmore University** Nairobi, KE 2013–Present

Visiting Faculty, Institute of Mathematical Sciences

ADMINISTRATIVE APPOINTMENTS

University of South Carolina–Upstate Spartanburg, SC Chair, Div. of Math & Computer Science	2017–Present
University of South Carolina–Upstate Spartanburg, SC Interim Chair, Div. of Math & Computer Science	2015–2017
University of South Carolina–Upstate Spartanburg, SC Assistant Chair, Div. of Math & Computer Science	2013–2015

HONORS & AWARDS

Carnegie African Diaspora Fellow Strathmore University	2019
Ambassador’s Distinguished Scholar Ethiopia	2018
Carnegie African Diaspora Fellow University of South Africa	2017
University of South Carolina Featured Scholar Univ of South Carolina	2013
ICTP Visiting Scholar Strathmore University	2013–2016, 2017–2018
NIH Travel Awardee Diversity in Biostatistics Workshop (ENAR)	2010, 2012, 2016
NSF Research Fellow SAMSI	2011
NCI Postdoctoral Fellow Univ of North Carolina–Chapel Hill	2009–2010
NHLBI SIPID Scholar Washington Univ–St. Louis	2008–2009
NIH Travel Awardee Workshop for Junior Researchers in Biostatistics (ENAR)	2004
Gordon Fuller Memorial Graduate Scholar Texas Tech University	1999–2000, 2003–2004
NSF Travel Awardee 7th Purdue International Symposium on Statistics	2003
German Academic Exchange (DAAD) Graduate Scholar Egerton University	1993–1994
First Class Honors B.S. (Mathematics) Awardee Egerton University	1990

RESEARCH INTERESTS

Statistical Genomics, Genetics and Bioinformatics; Bayesian methods; Epidemiology; Cancer

PUBLICATIONS (*student co-author)

- 22. Mohammed*, M., Mwambi, H., Omolo, B., Elbashir, M. K. (2018).** Using stacking ensemble for microarray-based cancer classification. In *2018 International Conference on Computer, Control, Electrical, and Electronics Engineering (ICCCEEE)*, (pp. 1–8). IEEE.

21. Odhiambo, C., Davis, J., Omolo, B. (2017). Risk for Cardiovascular Disease in Blacks with HIV/AIDS in America: A Systematic Review and Meta-analysis. *Journal of Health Disparities Research and Practice*, **10**(2), 121–141.
20. Chaba*, L., Odhiambo, J., Omolo, B. (2017). Evaluation of Methods for Gene Selection in Melanoma Studies. *Int. J. Stats. Med. Res.*, **6**(1), 1–9.
19. Odhiambo*, C., Odhiambo, J., Omolo, B. (2017). Validation of the Smooth Test of Goodness-of-fit for Proportional Hazards in Cancer Survival Studies. *Int. J. Stats. Med. Res.*, **6**(2), 49–67.
18. Odhiambo*, C., Odhiambo, J., Omolo, B. (2017). A Smooth Test of Goodness-of-fit for the Weibull Distribution: An Application to an HIV Retention Data. *Int. J. Stats. Med. Res.*, **6**(2), 68–78.
17. Odhiambo*, C., Odhiambo, J., Omolo, B. (2017). A Smooth Test of Goodness-of-fit for the Baseline Hazard Function for Time-to-First Occurrence in Recurrent Events: An Application to an HIV Retention Data. *Int. J. Stats. Med. Res.*, **6**(3), 104–113.
16. Chaba*, L., Odhiambo, J., Omolo, B. (2017). Using Copulas to Select Prognostic Genes in Melanoma Patients. *Int. J. Stats. Med. Res.*, **6**(3), 114–122.
15. Chaba*, L., Odhiambo, J., Omolo, B. (2017). A Comparison of Parametric and Semi-Parametric Models for Microarray Data Analysis. *Int. J. Stats. Med. Res.*, **6**(4), 134–143.
14. Omolo, B., Yang, M., Lo, F.Y., Schell, M. J., Austin, S., Howard, K., Madan, A., Yeatman, T.J. (2016). Adaptation of a RAS Pathway Activation Signature from FF to FFPE Tissues in Colorectal Cancer. *BMC Medical Genomics*, **9**(1):65. [PMID: **27756306**].
13. Oluyede, B. O., Yang, T., Omolo, B. (2015). A Generalized Class of Kumaraswamy Lindley Distribution with Application to Lifetime Data. *Journal of Computations & Modelling*, **5**(1), 27–70.
12. Kaufmann, W. K., Carson, C., Omolo, B., Sambade, M., Simpson, D., Filgo, A., Fields, J., Ibrahim, J., Thomas, N. (2014). Mechanisms of chromosomal instability in melanoma. *Environ Mol Mutagen*, **55**(6), 457–471. [PMID: **24616037**].
11. Nikolaishvilli-Feinberg, N., Cohen, S. M., Midkiff, B., Zhou, Y., Olorvida, M., Ibrahim, J. G., Omolo, B., Shields, J. M., Thomas, N. E., Groben, P. A., Kaufmann, W. K., Miller, C. R. (2014). Development of DNA Damage Response Signaling Biomarkers Using Automated Quantitative Image Analysis. *J Histochem Cytochem*, **62**, 185–196. [PMID: **24309508**].
10. Omolo, B., Carson, C., Chu, H., Zhou, Y., Simpson, D. A., Hesse, J. E., Paules, R. S., Nyhan, K. C., Ibrahim, J. G., Kaufmann, W. K. (2013). A prognostic signature of G2 checkpoint function in melanoma cell-lines. *Cell Cycle*, **12**, 1071–1082. [PMID: **23454897**].
9. Omolo, B., Zhang, H., Karmaus, W. (2013). Cautions of Using Allele-based Tests under Heterosis. *Int. J. Stats. Med. Res.*, **2**, 47–54.
8. Hamilton, R., Krauze, M., Romkes, M., Omolo, B., Konstantinopoulos, P., Reinhart, T., Harsanymczuk, M., Wang, Y., Lin, Y., Ferrone, S., Whiteside, T., Bortoluzzi, S., Werley, J., Nukui, T., Fallert-Junecko, B., Kondziolka, D., Ibrahim, J., Becker, D., Kirkwood, J., Moschos, S. (2013). Pathologic and Gene Expression Features of Metastatic Melanomas to the Brain (MBM). *Cancer*, **119**,

2737–2746. [PMID: 23695963].

7. **Carson, C., Omolo, B., Chu, H., Zhou, Y., Sambade, M. J., Peters, E. C., Tompkins, P., Simpson, D. A., Thomas, N. E., Fan, C., Sarasin, A., Dessen, P., Shields, J.M., Ibrahim, J. G., Kaufmann, W. K. (2012).**
A prognostic signature of defective p53-dependent G1 checkpoint function in melanoma cell-lines. *Pigment Cell Melanoma Res*, **25**, 514–526. [PMID: 22540896].
6. **Cooley, D., Cisewski, J., Erhardt, R. J., Jeon, S., Mannshardt, E., Omolo, B. O. & Sun, Y. (2012).**
A survey of spatial extremes: Measuring spatial dependence and modeling spatial effects. *Revstat*, **10**, 135–165.
5. **Morgan, D., Omolo, B. (2010).** Challenges in Genomic Data Processing I - Multiple Small Files. *SAS Global Forum 2010*, Paper 062-2010.
4. **S.-H. Lee, E. Lee, B. O. Omolo (2008).**
Using Integrated Weighted Survival Difference for the Two Sample Censored Data Problem. *Computational Statistics & Data Analysis*, **52**, 4410–4416.
3. **Hart, J., Omolo, B., Boone, W. R., Brown, C., Ashton, A. (2007).** Reliability of three methods of computer-aided thermal pattern analysis. *J Can Chiropr Assoc*, **51(3)**, 175–185.
2. **Hart, J., Omolo, B., Boone, W. R. (2007).** Thermal Patterns and Health Perceptions. *J Can Chiropr Assoc*, **51(2)**, 106–111.
1. **Einmahl, J. H. J., Omolo, B. O., Puri, M. L., Ruymgaart, F. H. (2005).** Aligned Rank Statistics for Repeated Measurement Models with Orthonormal Design Employing a Chernoff-Savage Approach. *Journal of Statistical Planning and Inference*, **130**, 167–182.

RESEARCH SUPPORT

The Burroughs Wellcome Fund 1015192	2015–2016
Role: Principal Investigator; Total Funding: \$10,000.	
National Cancer Institute 3U01-CA-157960-03S1	2014–2016
Role: Co-Investigator; Total Funding: \$269,336.	
Simons Foundation 282714	2013–2018
Role: Principal Investigator; Total Funding: \$35,000.	
SC Research Foundation - RISE Program 17880-14-35535	2014
Role: Principal Investigator; Total Funding: \$5,000.	
SC Research Foundation - RISE Program 17880-13-32933	2013
Role: Principal Investigator; Total Funding: \$5,000.	
SC Research Foundation - ASPIRE Program 17880-12-29602	2012–2013
Role: Principal Investigator; Total Funding: \$11,228.	
USC Upstate Teaching & Productive Scholarship Grants	2007–2018
Role: Principal Investigator; Total Funding: \$17,948.	
USC Upstate Faculty Course Reallocation Grants	2009–2014
Role: Principal Investigator; Total Funding: \$10,000.	

INVITED TALKS

- Adaptation of a RAS Pathway Activation Signature from FF to FFPE Tissues in Colorectal Cancer**
Statistical Genetics in Cardiovascular Medicine Meeting, Loyola University–Chicago; September, 2017.
- A Comparison of Parametric and Semi-parametric Models for Microarray Data Analysis** ISI-World Statistics Congress 2017 Conference, Marrakech, Morocco; July, 2017.

Adaptation of a RAS Pathway Activation Signature from FF to FFPE Tissues in Colorectal Cancer World Cancer Congress 2017 Conference, Barcelona, Spain; May, 2017.

Using Copulas to Select Prognostic Genes in Melanoma Patients. ICMSIT 2016 Conference, Tanta University, Egypt; December, 2016.

A Quantitative Trait Analysis of the G2 Checkpoint Function in Melanoma Cell-lines. Department of Probability & Statistics Seminar, CIMAT, Guanajuato, Mexico; June, 2015.

A Prognostic Signature for G2 Checkpoint Function in Melanoma Cell Lines. 2nd Strathmore International Mathematics Conference, Strathmore University; August, 2013.

A Bayesian Hierarchical Model for Correlation in Microarray Studies. International Mathematics Research Meeting, Strathmore University; July, 2012.

Statistical Analysis of DNA Microarray Data. The First Strathmore University Mathematics Conference, Strathmore University; August, 2011.

A Signature of p53-dependent G1 Checkpoint Function in Melanoma Cell-lines. Department of Mathematical Sciences Colloquium, Georgia Southern University; March, 2011.

Quantitative Analysis of G2 Checkpoint Function in Melanoma Cell-lines. LCCC Biostatistics Core Seminar, University of North Carolina–Chapel Hill; January, 2011.

Cautions of Using Allelic Tests under Overdominance. Morehouse School of Medicine, Atlanta, GA; November, 2009.

Statistical Methods for Observational Studies. International Research and Philosophy Symposium, Sherman College; October, 2005.

CONTRIBUTED TALKS (*student presenter)

***Comparison of the SAM and a Bayesian Method for Differential Gene Expression Analysis.** XXVIII IBC Conference, Victoria, Canada; July, 2016. *Best Paper Award, Young Statisticians Showcase*

***A Copula-based Approach to Differential Gene Expression Analysis.** XXVII IBC Conference, Florence, Italy; July, 2014.

A Prognostic Signature of Defective p53-dependent G1 Checkpoint Function in Melanoma Cell-lines. Joint Statistical Meetings, San Diego, CA; August, 2012.

A Bayesian Hierarchical Model for Correlated Microarray Datasets. Joint Statistical Meetings, Miami, FL; August, 2011.

Bayesian Hierarchical Models for Cross-Study Reproducibility of Gene Expression Data. ENAR Conference, New Orleans, LA; March, 2010.

Cautions of Using Allele-based Tests under Heterosis. WNAR / IMS Conference, Portland State University; June, 2009.

An Aligned Rank Test for a Repeated Measurement Model with Orthonormal Design. 2nd Lehmann

Symposium on Optimality, Rice University; May, 2004.

Aligned Rank Statistics for Repeated Measurement Models with Orthonormal Design Employing a Chernoff-Savage Approach. 7th Purdue International Symposium on Statistics, Purdue University; June, 2003.

POSTER PRESENTATIONS (*student presenter)

Using Copulas to Select Prognostic Genes in Melanoma Patients. *ICOSDA* Conference, Niagara Falls, Canada; October, 2016.

***A Smooth Test of Goodness-of-fit for the Weibull Distribution: An Application to an HIV rentention Data.** *ICOSDA* Conference, Niagara Falls, Canada; October, 2016.

***A Smooth Test of Goodness-of-fit for the Weibull Distribution: An Application to an HIV rentention Data.** XXVIII *IBC* Conference, Victoria, Canada; July, 2016.

Validation of a 32-gene classifier for the subtyping of carcinomas using the qNPA™ ArrayPlate Platform. AACR Annual Meeting, Philadelphia, PA; April, 2015.

***A Smooth Test of Goodness-of-fit for the Baseline Hazard Function in Recurrent Event Models.** XXVII *IBC* Conference, Florence, Italy; July, 2014.

Mechanisms of Chromosomal Instability in Melanoma. XXVII *IBC* Conference, Florence, Italy; July, 2014.

A Prognostic Signature for G2 Checkpoint Function in Melanoma Cell Lines. SRCOS Summer Research Conference, Burns, TN; June, 2013.

Bayesian Modeling of Cross-study Reproducibility of Gene Expression Data. SRCOS Summer Research Conference, Norfolk, VA; June, 2010.

An Asymptotically Distribution-free Aligned Rank Test for Location in a Repeated Observation Model. Nonparametric Statistics Conference, University of South Carolina-Columbia; October, 2007.

An Asymptotically Distribution-free Aligned Rank Test for Linearity of a Median Regression Function. Risk Analysis, Extreme Events and Decision Theory Workshop, SAMSI; September, 2007.

Aligned Rank Statistics for Repeated Measurement Models with Orthonormal Design Employing a Chernoff-Savage Approach. Justus Seely Conference on Linear Models, Oregon State University; July, 2003.

MENTORING & SUPERVISION

Collins Odhiambo Lecturer, Strathmore University (Ph.D., 2017)

Linda Chaba Lecturer, Strathmore University (Ph.D., 2017)

Erick Okuto Lecturer, JOOUST (Ph.D., 2016)

Mohanad Mohammed Graduate Student, University of KwaZulu-Natal (MSc., 2018)

Morine Akoth Postgraduate Fellow, Strathmore University

(Ph.D. in progress)

TEACHING RECORD (Course / Textbook Authors)

STA 8202: Probability and Stochastic Models Ross

STAT 512: Mathematical Statistics Hogg & Tanis; Hogg, Tanis & Zimmerman

STAT 413: Introduction to Stochastic Processes Durrett; Ross

STAT 410: Introduction to Probability Theory Weiss; Hogg & Tanis; Ross

STAT 516: Statistical Methods II Ott & Longnecker

MATH 315: Statistical Methods I Ott & Longnecker

MATH 141: Calculus I Stewart

ECON 292: Statistical Inference for Business and Economics Lind *et al.*

SOC 201: Social Statistics Babbie, Halley & Zaino

MATH 102: Elementary Statistics I Brase & Brase; Moore; Larson & Farber

PROFESSIONAL SERVICE

Editorial Advisory Board Member International Journal of Statistics in Medical Research

Reviewer for: Statistics in Medicine; Mathematical Reviews (AMS); PLoS ONE; Communications in Statistics - Simulation and Computation; Journal of Statistical Distributions and Applications; South African Journal of Statistics; The American Statistician; Journal of Biological Methods; Afrika Statistika; Journal of Advanced Statistics; Electronic Journal of Applied Statistical Analysis; Journal of Health Disparities Research and Practice.

External Reviewer for Promotion BIUST, Botswana 2019

Reviewer for the National Research Foundation (NRF) Pretoria, South Africa 2017

External Reviewer for Promotion and Tenure Kansas State University 2017

External Examiner for Dissertation University of KwaZulu-Natal 2016

External Examiner for Thesis BIUST, Botswana 2016

Grant Review Panel Member, RISE Research Grants Univ of South Carolina 2015

Grant Review Panel Member, ASPIRE-I Research Grants Univ of South Carolina 2014

Scientific Committee Member, Sub-Saharan Conference on Spatial Statistics Univ of the Witwatersrand 2014

Session Chair, ENAR 2010: <i>Pathway and Network-based Genomic Analysis</i>	2010
Judge, Undergraduate Students Caucus and Poster Competition, AACR Conference GA	Atlanta, 2019
Judge, ABRCMS Conference Charlotte, NC	2010
Scientific Committee Member, SIMC Strathmore University	2013–Present
PROFESSIONAL MEMBERSHIP	
American Statistical Association (ASA)	2002–Present
International Biometric Society (ENAR)	2002–Present
Institute of Mathematical Statistics (IMS)	2003–Present
American Association for Cancer Research (AACR)	2012–Present
International Society for Bayesian Analysis (ISBA)	2011–Present
American Society of Clinical Oncology (ASCO)	2014–2016