

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

- | | |
|--|-----------------|
| University of North Carolina - Chapel Hill Chapel Hill, NC
Postdoctoral Research Associate (Cancer Genomics), Dept. of Biostatistics | 07/2009–08/2010 |
| Texas Tech University Lubbock, TX
Ph.D. in Mathematical Statistics, Dept. of Mathematics & Statistics | 08/1999–08/2004 |
| Egerton University Njoro, KE
M.S. in Statistics, Dept. of Mathematics. | 02/1992–05/1994 |
| Egerton University Njoro, KE
B.S. in Mathematics, Dept. of Mathematics. | 08/1987–09/1990 |

ACADEMIC POSITIONS

- | | |
|---|-----------------|
| University of South Carolina–Upstate Spartanburg, SC
Professor, Div. of Math & Computer Science | 08/2016–Present |
| University of South Carolina–Upstate Spartanburg, SC
Associate Professor, Div. of Math & Computer Science | 08/2010–08/2016 |
| University of South Carolina–Upstate Spartanburg, SC
Assistant Professor, Div. of Math & Computer Science: On Education Leave | 07/2009–08/2010 |
| University of South Carolina–Upstate Spartanburg, SC
Assistant Professor, Div. of Math & Computer Science | 08/2004–06/2009 |
| University of South Africa Johannesburg, South Africa
Visiting Fellow, Department of Statistics | 07/2017–07/2017 |
| Swiss Institute of Bioinformatics (SIB) Lausanne, CH
Visiting Scientist | 06/2016–08/2016 |
| Statistical and Mathematical Sciences Institute (SAMSI) RTP, NC
Visiting Research Fellow | 09/2011–12/2011 |
| Strathmore University Nairobi, KE
Visiting Professor, Institute of Mathematical Sciences | 06/2013–Present |
| Texas Tech University Lubbock, TX
Graduate Part-time Instructor, Dept. of Mathematics & Statistics | 08/1999–08/2004 |
| Egerton University Njoro, KE
Lecturer, Dept. of Mathematics: On Study Leave | 08/1999–08/2004 |
| Egerton University Njoro, KE
Lecturer, Dept. of Mathematics | 02/1999–08/1999 |
| Egerton University Njoro, KE
Assistant Lecturer, Dept. of Mathematics | 05/1994–01/1999 |
| Egerton University Njoro, KE | 10/1990–05/1994 |

Teaching Assistant, Dept. of Mathematics

ADMINISTRATIVE POSITIONS

University of South Carolina–Upstate Spartanburg, SC 08/2017 – 05/2020
Chair, Div. of Math & Computer Science

University of South Carolina–Upstate Spartanburg, SC 08/2015 – 06/2017
Interim Chair, Div. of Math & Computer Science

University of South Carolina–Upstate Spartanburg, SC 08/2013 – 08/2015
Assistant Chair, Div. of Math & Computer Science

HONORS & AWARDS

Nominee for the 2014-15 USC Upstate Excellence in Teaching & Advising Award Univ of South Carolina – Upstate

Nominee for the 2013-14 Bank of America Excellence in Teaching & Advising Award Univ of South Carolina – Upstate

USC Featured Scholars of the Month Univ of South Carolina 08/2013

ICTP Visiting Scholarship Strathmore University 03/2013 – 06/2019

NIH Travel Award Diversity in Biostatistics Workshop (ENAR) 03/2010, 03/2012, 03/2016

NSF Research Fellowship SAMSI 09/2011–12/2011

NCI Training Fellowship Univ of North Carolina–Chapel Hill 07/2009–08/2010

NHLBI SIPID Scholarship Washington Univ–St. Louis 2008/09

NSF Travel Award Quality Education for Minorities, Washington, DC 05/2008

NIH/NCI Travel Award Workshop for Junior Researchers in Biostatistics (ENAR) 03/2004

Gordon Fuller Memorial Graduate Scholarship Texas Tech University 1999–2000, 2003–2004

NSF Travel Award 7th Purdue International Symposium on Statistics 06/2003

German Academic Exchange (DAAD) Graduate Scholarship Egerton University 1993–1994

First Class Honors B.S. (Mathematics) Egerton University 09/1990

RESEARCH INTERESTS

Statistical Genomics and Genetics; Bioinformatics; Clinical Trials; Cancer; Environmetrics

JOURNAL ARTICLES (*student co-author)

*Chaba, L., Odhiambo, J., Omolo, B. (2017). Evaluation of Methods for Gene Selection in Melanoma Studies. *Int. J. Stats. Med. Res.*, **6**, 1–9.

- ***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**, 49–67.
- ***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**, 68–78.
- ***Chaba, L., Odhiambo, J., Omolo, B. (2017).** Using Copulas to Select prognostic Genes in Melanoma Patients. (accepted)
- ***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. (accepted)
- 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**].
- Oluoyede, 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.
- 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**].
- Nikolaishvili-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**].
- 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**].
- Omolo, B., Zhang, H., Karmaus, W. (2013).** Cautions of Using Allele-based Tests under Heterosis. *Int. J. Stats. Med. Res.*, **2**, 47–54.
- Hamilton, R., Krauze, M., Romkes, M., Omolo, B., Konstantinopoulos, P., Reinhart, T., Harasymczuk, 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**].
- 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**].
- 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
- 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

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

***Chaba, L., Odhiambo, J., Omolo, B. (2017).** A Comparison of Parametric and Semi-Parametric Models for Microarray Data Analysis. (submitted)

***Okuto, E., Marshall, M., Odondi, L., Ongati, O., Muhammad, A., Opiyo, E., Omolo, B. (2017).** A Novel Bayesian Approach to Smooth and Gap-Fill Earth Observation-based Vegetation Index Records. (submitted)

RESEARCH SUPPORT

The Burroughs Wellcome Fund 1015192	06/2015 – 08/2016
Role: Principal Investigator; Total Funding: \$10,000.	
National Cancer Institute 3U01-CA-157960-03S1	09/2014 – 08/2016
Role: Co-Investigator; Total Funding: \$269,336.	
Simons Foundation 282714	09/2013 – 08/2018
Role: Principal Investigator; Total Funding: \$35,000.	
SC Research Foundation - RISE Program 17880-14-35535	05/2014 – 12/2014
Role: Principal Investigator; Total Funding: \$5,000.	
SC Research Foundation - RISE Program 17880-13-32933	05/2013 – 08/2014
Role: Principal Investigator; Total Funding: \$5,000.	
SC Research Foundation - ASPIRE Program 17880-12-29602	05/2012 – 08/2013
Role: Principal Investigator; Total Funding: \$11,228.	
USC Upstate Teaching & Productive Scholarship Grants	10/2007 – 05/2017
Role: Principal Investigator; Total Funding: \$15,198.	
USC Upstate Faculty Course Reallocation Grants	01/2009 – 12/2014
Role: Principal Investigator; Total Funding: \$10,000.	

INVITED TALKS

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 presentation)

***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. 2012 Joint Statistical Meetings, San Diego, CA; August, 2012.

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

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

Cautions of Using Allele-based Tests under Heterosis. 2009 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 presentation)

Using Copulas to Select Prognostic Genes in Melanoma Patients. *ICOSDA 2016* 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 2016* 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. 2015 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. 2013 SRCOS Summer Research Conference, Burns, TN; June, 2013.

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

An Asymptotically Distribution-free Aligned Rank Test for Location in a Repeated Observation Model. 2007 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

Erick Okuto Assistant Lecturer, JOOUST (Ph.D., 05/2016)

Linda Chaba Assistant Lecturer, Strathmore University (in progress)

Collins Odhiambo Assistant Lecturer, Strathmore University (in progress)

Morine Akoth Assistant Lecturer, Strathmore University (in progress)

Patrick Shabaya Assistant Lecturer, Strathmore University (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

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; South African Journal of Statistics; The American Statistician; Journal of Biological Methods; Electronic Journal of Applied Statistical Analysis

Dissertation External Examiner University of KwaZulu-Natal

External Examiner Botswana International University of Science and Technology

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

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

Contributed Session Chair, ENAR 2010: *Pathway and Network-based Genomic Analysis*

Abstract Reviewer and Judge, ABRCMS Conference

External Member, Scientific Committee, SIMC Strathmore University

Member, External Scientific Committee, SACSSS University of the Witwatersrand

2013 Research and Worksite Mentor, STEM Internship Program Dorman High School

2005 Faculty Mentor, SPRI SC Governor's School of Science & Mathematics

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