BIOGRAPHICAL SKETCH

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NAME: Alonzo, Todd A.

eRA COMMONS USER NAME (credential, e.g., agency login): TALONZO

POSITION TITLE: Research Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Cal Poly State University, San Luis Obispo, CA	B.S.	12/1994	Statistics
University of Washington, Seattle, WA	M.S.	06/1997	Biostatistics
University of Washington, Seattle, WA	Ph.D.	06/2000	Biostatistics

A. Personal Statement

As a Research Professor at University of Southern California and a Biostatistician for the AML Strategy Group at Children's Oncology Group (COG), I have played a key role in the development and conduct of many treatment and biology studies in childhood AML. This work has greatly advanced our current understanding of prognostic biomarkers for pediatric AML. In addition, as COG Group Statistician, I lead the COG Statistics and Data Management Center. In total, I have over 220 publications.

B. Positions, Scientific Appointments, and Honors

Scientific Appointments

1997-1998 Research Assistant, Department of Biostatistics, University of Washington, Seattle, WA
1998-2000 Research Assistant, Division of Biostatistics; Fred Hutchinson Cancer Research Center, Seattle, WA
2000-2005 Assistant Professor of Research, Full-Time, Non Tenured, Department of Preventive Medicine, University of Southern California, Los Angeles, CA
2005-2011 Associate Professor of Research, Full-Time, Non Tenured, Department of Preventive Medicine, University of Southern California, Los Angeles, CA.
2011-present Professor of Research, Full-Time, Non Tenured, Department of Preventive Medicine, University of Southern California, Los Angeles, CA.

Honors, Awards, and Other Professional Contributions

Honors and Awards

1995-2000 NIH Pre-doctoral Cardiovascular Biostatistics Training Grant
1999 ENAR Biometrics Society Best Student Paper
1999 WNAR Biometrics Society Best Student Oral Presentation
2000 Senior Biostatistics Award, Department of Biostatistics; University of Washington
2017 Outstanding Teacher Award, The International Society for Magnetic Resonance in Medicine
2018 Fellow, American Statistical Association

Professional Memberships

1996-present Member, American Statistical Association
1996-present Member, International Biometric Society

2004-2016 Member, Editorial Board of Pediatric Blood & Cancer
2005-2007 Member, Editorial Board of Journal of Clinical Oncology
2005-2019 Member, Editorial Board of Biometrical Journal
2008-2012 Member, Editorial Board of Biometrics

C. Contributions to Science

1. Advancement of Prognostic Biomarkers to Risk-Stratify AML Patients

My contributions include the design and analysis of clinical trials and correlative biology studies, especially in pediatric AML, development of methods for estimating the accuracy of new techniques for disease detection (e.g., biomarkers, diagnostic tests, genetic markers, and imaging modalities) in the presence of verification bias. As the lead statistician for the COG's Myeloid Committee, I have designed and analyzed many of the most important clinical trials of children and young adults with AML in the United States over the last decade. As part of these analyses, I have performed numerous correlative AML biology studies that have helped to refine risk groups as well as modify treatment. For example, results published by Sievers, et al. (2003) and Loken, et. al. (2012) have been used to support the use of minimal residual disease as a high risk feature. In report by Meshinchi, et al. (2006), we showed that patients with a *FLT3*/ITD and an ITD-allelic ratio (AR) greater than 0.4 have a poor prognosis compared with patients with wild-type *FLT3*. The results from this study were used to identify high risk patients with a *FLT3*/ITD and an ITD-AR greater than 0.4.

a. Sievers EL, Lange BJ, **Alonzo TA**, Gerbing RB, Bernstein ID, Smith FO, Arceci RJ, Woods WG, Loken MR. Immunophenotypic evidence of leukemia after induction therapy predicts relapse: results from a prospective Children's Cancer Group study of 252 patients with acute myeloid leukemia. Blood 101: 3398-3406, 2003. PMID: 12506020

b. Meshinchi S, **Alonzo TA**, Stirewalt DL, Zwaan M, Zimmerman M, Reinhardt D, Kaspers GJL, Hereema NA, Gerbing RB, Lange BJ, Radich JP. Clinical implications of FLT3 mutations in pediatric AML. Blood 108: 3654-3661, 2006. PMCID: PMC1895470.

c. Loken, MR**, Alonzo TA,** Pardo, L, Gerbing, RB, Raimondi, SC, Hirsch, BA, Ho, PA, Franklin, J, Cooper, TM, Gamis, AS, Meshinchi, S. Residual disease detected by multidimensional flow cytometry signifies high relapse risk in patients with de novo acute myeloid leukemia: a report from Children's Oncology Group. Blood 120: 1581-8, 2012. PMCID: PMC3429302.

2. Verification Bias

The accuracy of a new detection method is ideally determined by administering it to all study subjects along with the gold standard used to determine disease status. In practice, however, ascertainment of true disease status may be too invasive or costly to be performed in all study subjects. Although it may be more ethical or cost-effective to ascertain true disease status in high risk subjects, I showed in two publications (*Biostatistics*, 2003; *Applied Statistics*, 2005) that estimates of disease prevalence and test accuracy can be biased. I was able to develop valid statistical methods to assess accuracy of medical tests and biomarkers in studies with incomplete disease verification. I proposed and compared imputation and re-weighting estimators of disease prevalence and test-accuracy measured using a receiver operating characteristic (ROC) curve. I have also proposed estimators of relative accuracy between two binary screening tests with in paired studies with incomplete disease verification (*Statistics in Medicine*, 2004) and in unpaired post-market device studies with incomplete disease assessment (*Biometrical Journal*, 2009).

a. **Alonzo TA**, Pepe MS, Lumley TS. Estimating disease prevalence in two-phase studies. Biostatistics 4: 313-326, 2003. PMID: 12925524

b. **Alonzo TA**, Braun TB, Moskowitz CS. Small sample estimation of relative accuracy for binary screening tests. Statistics in Medicine 23: 21-34, 2004. PMID: 14695637

c. **Alonzo TA**, Pepe MS. Assessing accuracy of a continuous screening test in the presence of verification bias. JRSS: Series C (Applied Statistics) 54: 173-190, 2005.

d. **Alonzo TA.** Small sample estimation of relative accuracy for binary screening tests. Statistics in Medicine. Biometrical Journal 51: 491-503, 2009.

Complete List of Published Work in MyBibliography:
http://www.ncbi.nlm.nih.gov/sites/myncbi/1R7D5dO8lFHQr/bibliography/48085682/public/?sort=date&direction=ascending