AMERICAN STATISTICAL ASSOCIATION
HOUSTON AREA CHAPTER
NEWSLETTER
November 6, 2012

Wednesday, November 14, 2012

Use of Convex Hull Area as a Concurrent Outcome with Survival Data When Censoring Rates are High

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Many joint models of longitudinal and survival data have been proposed and implemented in the statistical literature in recent years, mainly with applications to clinical trials in mind. For example, while length of survival after cancer diagnosis may be the most important outcome for evaluating potential treatments, the time trends of other outcomes measured more or less continuously during treatment also may provide information as to the well-being of the patient. At the NASA Johnson Space Center, survival analysis also is relevant during research directed towards development of countermeasures against orthostatic intolerance (OI) (increased propensity to faint while standing) after prolonged spaceflight. In a typical situation, astronauts are tested for their degree of OI before and after space missions, such as 6-months stays on the International Space Station. The standard method for evaluating OI is for subjects to lie flat on a tilt table and then to be tilted to 80º head-up tilt for a short period of time. Head-up tilt is maintained until the subject shows symptoms of OI (light-headedness, fatigue, nausea, dizziness, headache, sweating, weakness and occasionally fainting during upright standing) or until a set time has passed. If the test is stopped early, that is the "survival" time; otherwise the outcome is censored. However because of high demand for astronauts' time immediately after landing, the maximum time allowed for testing is short, and the censoring rate is often too high to permit comparison of countermeasure strategies based on survival time alone. As a consequence, the time-trends of concurrent measurements of cardiovascular function during the tilt tests become the main outcome of interest for assessing OI. In particular we will show how "wild" behavior of these measurements is strongly associated with shorter tilt test survival times. In turn, the area (or volume) of the convex hull of the locus of points traced out by changes in these measurements makes an excellent predictor of survival, even in studies where most tests are terminated early. An example evaluating bedrest as a spaceflight analog will be presented.

HACASA meetings are open to the public! Please pass on copies of this announcement to colleagues and friends and post on appropriate bulletin boards.

WHEN and WHERE: ***Wednesday November 14, 2012*** at Duncan Hall, Rice University
5:30pm - Social Time and with snacks & drinks: Room 3092 ***Different Room***
6:30pm – Talk (Room 3092) ***Different Room***

Duncan Hall (also known as the Computational Engineering Building) is on the northeast side of the Rice University Campus. For parking information and directions please refer to the Rice parking websites, the following have been found helpful:
http://cohesion.rice.edu/campusservices/parktrans/parking/visitors.cfm
http://www.rice.edu/maps/maps.html

Thank you to **Rice University** and the **Department of Statistics at Rice University** for their generous support of HACASA by allowing us the use of their facilities for our gatherings, **and sponsoring FREE PARKING. See Hadley Wickham for a voucher at the meeting.**

To help us cover cost of our weekly snacks, we are asking for small donations ($5 or more). Also, please RSVP so we can bring enough snacks and drinks. Please RSVP to Margaret Kuzynski at HoustonASA@gmail.com.

Introducing the officers!

The officers for the 2012-2013 academic year are:
President: Hao Liu (haol@bcm.edu)
President Elect: Becky Slack (**RSSlack@mdanderson.org**)
Past President: Jose-Miguel Yamal (Jose-Miguel.Yamal@uth.tmc.edu)
Secretary: Michael Swartz (Michael.D.Swartz@uth.tmc.edu)
Treasurer: Margaret Kuczynski (margaret.kuczynski@gmail.com)
Science Fair Coordinator: Erin Hodgess (HodgessE@uhd.edu)
ASA Chapter Representative: Becky Slack (**RSSlack@mdanderson.org**)

Reminder!

Membership dues: Students: $1, and non-students: $8.

Welcome New Members!

Please take a moment at this month's meeting to welcome new members!

Mark Your Calendars!

This year we are still meeting every month. In the Fall Semester (September through December) we will meet on the 2nd or 3rd **Wednesday** of each month, depending on the month. In the Spring (January through May), we return to the 2nd or 3rd **Tuesday** of the month, depending on the month The official dates and locations are below (all rooms are located in Duncan Hall on Rice University Campus):

Wednesday, September 12, 2012 (DH1049)
Wednesday, October 17, 2012 (DH1049) 3rd Wednesday of October
Wednesday, November 14, 2012 (DH 3092)
Wednesday, December 12, 2012 (DH 3092) Holiday Potluck
Tuesday, January 15, 2013 (room TBA) 3rd Tuesday of January
Tuesday, February 12, 2013 (room TBA)
Tuesday, March 12, 2013 (room TBA)
Tuesday, April 9, 2013 (room TBA)
Tuesday, May 14, 2013 (room TBA) (Science Fair Winners)

Let us know what you think!

Send comments to Michael Swartz at HoustonASA@gmail.com with the subject COMMENTS. Or Send comments / additions / corrections concerning the HACASA newsletter to Michael Swartz at Michael.D.Swartz@uth.tmc.edu

Announcements

New Website is launched!
Our new website is launched! Please visit it for more information and announcements: http://sites.google.com/site/houstonasa/
for comments and suggestions regarding content, please contact our website coordinator\maintainer: Margaret Kuczynski (margaret.kuczynski@gmail.com)

JOB POSTINGS

Opening at the Dan L. Duncan Cancer Center, Houston TX.

The Dan L Duncan Cancer Center Division of Biostatistics at Baylor College of Medicine (Houston) collaborates with investigators engaged in the molecular profiling of cancers at various levels of complexity (including somatic mutation, mRNA, microRNA, DNA copy number, and protein), with the overall goal of better understanding cancer biology and improving cancer diagnosis and treatment. For this position, we are looking for someone to assist in statistical analysis of high throughput molecular data, including integration of datasets from disparate sources. BS in statistics, MIS, or related field required. For more information contact: Dr. Chad Creighton <creighto@bcm.edu>. More information on the HACASA Website soon.

Opening at University of Texas El Paso

The Department of Mathematical Sciences at The University of Texas at El Paso invites applications for a tenure-track position at the Assistant/Associate Professor level starting fall 2013. The Department is seeking someone who will develop an independent research program in statistics and teach undergraduate and graduate courses in statistics. Opportunities exist to participate in consulting and collaborative research through the Statistical Consulting Laboratory www.statlab.utep.edu. More information on the HACASA website.