Shared Resource Updates

Adaptive Sample Size: Developed a re-estimation method that retains blinding of group assignment, and allows for an increase in enrollment when the event rate (recurrence for one trial, death for the other) is lower than initially anticipated. A manuscript is in press (clinical trials) on a method of blinded re-estimation and bootstrapped sample size distributions, which provides confidence in settling on a sample size near the end of planned accrual.

Methods for Donor Cell Experiments: Donor cell experiments involve repeated measures (mixed) modeling. The BSR has developed a method of robustly testing hypotheses in these experiments by using concepts from conditional mixed models to ensure the variance estimates (denominator of test statistics) are not biased (presented at Joint Statistical Meeting (JSM) August 2009). This method avoids estimating a saturated co-variance structure (which is often computationally difficult because of the small sample sizes available for many of these experiments) by defining appropriate variance components for specific contrasts on fixed effects.

Mechanism Hypothesis Testing: Many cell experiments involve up-and-down regulation to validate direct control of the target outcome. This requires significant differences for both up-and-down conditions vs. control. The BSR has identified a method of determining sample size that ensures, with chosen power, significance for both comparisons simultaneously. The same method is used when testing a combination of conditions against each condition alone. Similarly, the BSR is researching methods to draw broader conclusions from a series of experiments that add confidence to a hypothesis about pathway mechanisms compared to more limited conclusions for each experiment in a series.

New Employee: Vedat Yildiz is the most recent employee to join the Center for Biostatistics. Yildiz has been with the OSUCCC since 2010 after receiving an MS in statistics from Western Michigan University in 2004. He developed a strong background in programming and statistical modeling techniques while working for the safety pharmacology group that provide statistical support to Pharmaceutical Product Development Group at Battelle Institute before coming to OSU.