

Statistical Assessment of Reproducibility and Power for RNA-seq Studies



Abstract: I will present two current research projects to address two essential issues in designing and analysis of RNA-seq experiments. The first project is to perform a reproducibility assessment of RNA-seq platforms. To accomplish this goal, I employed a systematic approach (including data visualization and statistical modeling) on analyzing the SEQC RNA-seq data. For the second project, I developed a novel simulation based procedure for power estimation of differential expression for correlated RNA-seq data. It was compared to a procedure with the usage of a bivariate negative binomial distribution for paired designs.

About the Speaker: Dr. Yu received his statistics PhD in 2006. From 2006-2014, Dr. Yu was a research scientist at the Center for Biostatistics. Starting from 2014, he has been a research assistant professor in the Department of Biomedical Informatics, and also the high-dimensional group leader in the Center for Biostatistics. He has built long-term collaboration with investigators from the College of Medicine and the Comprehensive Cancer Center. Dr. Yu's research focus is to develop statistical methods to answer biological questions by utilizing high-throughput genomic data.

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