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## **Interdisciplinary Data Sciences Consortium** **Seminar Series**

March 22, 2019, 2:00-3:00pm

Location: ISA 3050

Featuring Dr. Chen, Dung-Tsa  
Department of Biostatistics and Bioinformatics  
Moffitt Cancer Center

### **Title: Utilization of Statistical Strategies in Team Science: An Outlier Approach in a Genomic Research and Data Visualization and Reduction in a Processed Image Data Analysis**

**Abstract:** This talk will share statistical experiences in team science cancer research projects including genomic profiling development and image data analysis. For genomic research, the journey of gene signature development, malignancy-risk (MR) genes, in breast and lung cancer from the discovery phase to the validation phase will be presented. The discovery phase will cover integration of various statistical methods, including an outlier approach, to identify the MR genes and to validate in multiple external cohorts. In the validation phase, it will be demonstrated the signature's robustness in different types of platforms and tissue, as well as its prognostic and predictive values and the associated trial design. For the processed image data, an integrated data visualization strategy with data reduction method to evaluate the high correlated, skew, and hierarchical data in a brain tumor study will be discussed.

To learn more, visit: <https://moffitt.org/research-science/researchers/dung-tsa-chen/>



**Biography:** Dr. Dung-Tsa Chen is Senior Member in the Department of Biostatistics and Bioinformatics at Moffitt Cancer Center. He has been on numerous NCI grants as a co-investigator involving in the design, conduct, and analysis of research projects in cancer and has over 100 peer-reviewed publications to date. Dr. Chen's primary areas of expertise include clinical trial design, genomic data analysis, mixed models, survival data analysis, and biomarker analysis. He developed an outlier approach to derive a malignancy-risk gene signature in breast and lung cancer and published the results in Journal of the National Cancer Institute, Breast Cancer Research and Treatment and Biometrika. He also developed statistical designs for clinical trial, including a Bayesian pick-the-winner design in a randomized phase II clinical trial and power calculation for predictive biomarker studies with survival data as endpoint.

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