

July 18, Daoud Meerzaman, Benchmarking and Network Modeling Using Mutual Exclusivity to Identify Genomic Alterations in Cancer



Cancer is a complex category of diseases caused in large part by genetic or genomic, transcriptomic, proteomic, and epigenomics alterations leading to abnormal cell proliferation. Genes and their protein products rarely act in isolation. Therefore, it is necessary to utilize a comprehensive and integrated computational approach informed by systems biology and omics-oriented approaches to investigate the disruption of biological networks caused by genomic alterations.

In this talk, Dr. Meerzaman will describe two ongoing projects. The first focuses on Sequencing Quality Control Phase 2 (SEQC II), a collaborative project led by the Food and Drug Administration (FDA) that systematically investigated somatic mutations in paired breast cancer and normal cell lines and formulated best practices for identifying, or calling, genomic variations such as single-nucleotide polymorphisms, copy-number alterations, or single-nucleotide variants. Regarding the second project, Dr. Meerzaman will discuss methods developed by the CGBG team to use mutual exclusivity and pathway network interaction algorithms to identify low-frequency "driver" (that is, causative) genomic alterations at the pathway level.

[Session details...](#)

BIO:

Dr. Daoud Meerzaman joined the Computational Genomics and Biomedical informatics Group (CGBG) at NCI's Center for Biomedical Informatics and Information Technology (CBIIT) in 2012. Currently, Dr. Meerzaman serves as the Section Head for the Computational Genomics and Biomedical informatics group (CGBG) where he provides leadership and scientific direction to highly trained bioinformatics scientists at CGBG. Under his supervision, the CGBG provides bioinformatics analysis support for clinical, life sciences, and translational research for the intermural scientist at the National Cancer Institute. Previously, CGBG team provided state-of-the-art biomedical informatics services and algorithms to carry out functional genomics analysis for NCI initiated projects such as Therapeutically Applicable Research to Generate Effective Treatments (TARGET) and The Cancer Genome Atlas (TCGA). Dr. Meerzaman has published many articles in peer-reviewed journals and served as editor as well as reviewer for scientific journals. He also serves as an adjunct faculty member at the George Washington University in Washington, D.C., where he currently teaches molecular mechanisms of cancer. Dr. Meerzaman received his B.S. and doctorate degrees from George Washington University.

SUMMARY:

Topic: Benchmarking and Network Modeling Using Mutual Exclusivity to Identify Genomic Alterations in Cancer

Speaker: Daoud Meerzaman, Ph.D., Section Head for the Computational Genomics and Biomedical informatics group (CGBG)

Date: Wednesday, July 18, 2018

Time: 11 AM – 12 PM ET

You are invited to listen to Dr. Meerzaman's presentation in the NCI Shady Grove Building on Medical Center Drive or via WebEx. **Dr. Meerzaman will present onsite at Shady Grove.**

Presentation: A screencast of the presentation will be available for viewing after the event on the [NCI CBIIT Speaker Series YouTube Playlist](#) 

About the NCI CBIIT Speaker Series:

The National Cancer Institute (NCI) Center for Biomedical Informatics and Information Technology (CBIIT) Speaker Series presents talks from innovators in the research and informatics communities. The biweekly presentations allow thought leaders to share their work and discuss trends across a diverse set of domains and interests. The goals of the Speaker Series are: to share leading edge research; to inform the community of new tools, trends, and ideas; to inspire innovation; and to provide a forum from which new collaborations can begin. For additional information, including past speaker series presentations, visit the [CBIIT Speaker Series page](#).

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