# DC CFAR Clinical and Population Sciences Core

invites you to participate in an upcoming webinar!

Wednesday, September 27, 5:00-6:00 pm ET

## "Standardization of Continuous and Categorical Covariates in Sparse Penalized Regressions & Community Detection with Heterogeneous Block Covariance Model"

**Qing Pan, PhD**
**Professor, Department of Biostatistics and Bioinformatics, George Washington University**
**Co-Director, CPS Core, DC CFAR**

Dr. Pan will talk about three recent papers motivated by real data. First, she will explain an intuitive standardization method that targets at generating comparable selection probabilities in sparse penalized regressions for continuous, binary, or categorical covariates with the same impact. They illustrate the advantages of the proposed method in simulation studies, and apply it to the National Ambulatory Medical Care Survey data to select factors related to the opioid prescription in the US. Second, she will talk about my experiences in the Diabetes Prevention Program Outcome Studies and some issues when the long term follow-up of a randomized clinical trial turns into an observational study. If time permits, the last topic is community detection based on their pairwise relationships with signed and continuous weights. A novel variational expectation-maximization algorithm is proposed to estimate the group membership. The model is applied to a yeast gene expression dataset and gene clusters regulated by different transcript factors during the yeast cell cycle are detected.