1154-49-1861 **Mau Nam Nguyen*** (mnn3@pdx.edu), 724 SW Harrison Street, Portland, OR 97201. *Relative Interiors for Graphs of Convex Set-Valued Mappings and Applications to Generalized Differential Calculus.*

In this talk, we present a simple proof of a theorem by Rockafellar for representing relative interiors of graphs of convex set-valued mappings in terms of relative interiors of their domains and function values. Based on this theorem, we develop a geometric approach to convex generalized differential calculus in finite dimensions. This approach allows us to obtain natural and rather simple proofs of basic results of convex subdifferential calculus and also derive new results of convex analysis concerning optimal value functions, normals to inverse images of sets under set-valued mappings, and calculus rules for coderivatives of set-valued mappings. (Received September 16, 2019)