

**BIOINFORMATICS 2017 Fall SEMINAR SERIES**

Hosted by: Department of Computer and Information Sciences,
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Center for Bioinformatics and Computational Biology
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MONDAY, November 13, 2017**3:30pm****DBI Room 102****Rare cell variability in cancer therapy resistance*****Arjun Raj******Assistant Professor Bioengineering, University of Pennsylvania*****ABSTRACT:**

Therapies targeting mutated proteins hold much promise in the treatment of cancer, but the emergence of resistance to these therapies presents a major barrier to cures. Recent work from our lab in melanoma shows that rare cells can exhibit non-genetic cellular plasticity, which may provide a mechanism of resistance to these therapies. Furthermore, through the addition of drug, this transient plasticity converts into a new, stably resistant state via cellular reprogramming. We also describe a general method for identifying genes that are part of these rare-cell expression states and provide genome-wide quantification of gene expression memory. This approach has revealed that genes showing high levels of memory are part of gene expression programs in rare cells that confer biologically important phenotypes, such as therapy resistance.