1131-92-403   **Ravi S Pandey**, **David J Burks** and **Rajeev K Azad*** (`rajeev.azad@unt.edu`). *Towards More Robust Metagenome Profiling.*

Current methods for whole metagenome profiling are inherently limited by their inability to exemplify the microbial dynamism that shapes the genomes, resulting in chimeras with DNAs of different ancestries or origins. To circumvent this limitation, we propose a probabilistic framework to model segments of apparently different ancestries in microbes that are thus represented as ensembles of compositional signatures. By incorporating segmental signature models, a more robust metagenome profiling could be achieved. Our proposed method, Segmental Genome Model (SGM), brings in a remarkable improvement in accuracy over composition-based methods, with its performance further augmented by integrating with the alignment-based BLAST program. (Received July 18, 2017)