Integration of multi 'omics'. Where are we?

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For many decades, the natural phenomenon to understand the complex biological process is to find the similarities and/or differences that are observed in between various organisms. Later the journey has shifted to the cross comparison of similarities/differences within the same organism but across different species and up to sub cellular level. With many decades passed with this steady but slow progression, a revolution came through the human genome project that we refer as post-genomic era. With the divide and conquer principle, we are successful enough to understand the biology up to certain extent at the level of gene, protein, transcript, metabolite and many other individual components/processes. However, these individual sub domain studies are still far away from giving a complete answer to many complex biological problems. To bring potential answers to the surface, it is necessary to go with the concept of 'study the system as a whole'. It not only gives the idea of the functional aspect of an organism at global level, but also gives complete knowledge about how each cellular constituent function together in order to accomplish their particular task! But the question is how to get to there and what all we have to do to bring the information that is obtained from many approaches together to capitalize the potential these individual domains hold. For that we propose to develop an integrated platform to combine the genomic, proteomic and metabolomics resources and help enhancing our understanding level of biology.

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