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Bioinformatics - A Missing Piece in Your Toolkit

Ivana Mihalek, Bioinformatics Institute - Singapore

Digital Media Center Theatre
November 21, 2013 - 03:30 pm

Abstract:

Would you outsource the experiment design or the pipette work from your lab? Why then do so with the actual fruits of your labor - data processing, modeling and interpretation? It might be time, we will suggest in this presentation, to incorporate bioinformatics into biologists' standard toolkit.

There are some objective reasons, however, why this program has not been fully carried out so far: (i) bioinformatics tools are traditionally built for bioinformaticians - both input and output are unaccessible or uninterpretable from the endpoint user's (biologist's) perspective, (ii) researchers with the background in biosciences often lack the formal training and encouragement to experiment with the computer-based tools, and (iii) certain types of analysis are too resource demanding to be cost-effective for a single experimental group.   We will take a look at how these problems are commonly addressed in an academic setting, and how the current solutions can be moved forward and customized for the LSU bio-community:

Starting from a typical bioinformatics support framework that includes common core data analysis, custom-based support, bioinformatics training, and assistance with grant writing, we will examine its cost in terms of man- and computer power, as well as possible pitfalls. Furthermore, we will consider the requirements for the operation to scale with the growing throughput of experimental methods and knowledge accumulated in databases and literature, and the challenges in enabling the autonomous use of the provided resources. Finally, we will discuss how this facility can contribute to LSU as an attractive target for industrial collaborations and attractive workplace for its current and future scientists.

Speaker's Bio:

Ivana Mihalek obtained her MS in computer science (2001) and PhD in physics (2000) from U. of Kentucky. She started her work in bioinformatics as a postodoc in Baylor College of Medicine, Houston (2001-2007), and founded and ran her own group in Bioinformatics Institute in Singapore (2007-2013). Her group's work can be inspected at http://eopsf.org.