

Report: International Workshop on Bioinformatics and Systems Biology (IBSB)

2012

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1) Overview

IBSB is a workshop held annually since 2001 as part of an international educational collaboration between several research in Japan, the United States and Germany: Boston University in the United States, Charité-Universitätsmedizin Berlin, Humboldt-Universität zu Berlin, Freie University Berlin, Max Delbrück Center for Molecular Medicine in Berlin, Kyoto University, University of Tokyo. The workshop is forum for doctoral and post-doctoral researchers to present their current research and discuss their objectives with peers at a similar stage within their academic career. This year was the 11th IBSB workshop and was held in Humboldt-Universität Berlin.

2) Conference Summary

The work I presented was an exploratory analysis to evaluate the extent of the gene mRNA transcript and metabolite correlation through a pre-specified metabolic network. This work, which was presented as a poster, extends upon my previous pathway mining work, but aims to resolve outstanding issues about the interpretability of the extracted pathways in a biological context. In part this work was inspired by work presented at previous IBSB workshops by researchers from Germany. Specifically,

1. Nils Christian, Thomas Handorf, Oliver Ebenhöf, "*Metabolic Synergy: Increasing Biosynthetic Capabilities by Network Cooperation*", IBSB 2007, Genome Informatics 18: 321-330 (2007)
2. Georg Basler, Zoran Nikoloski, Oliver Ebenhöf, Thomas Handorf, "*Biosynthetic Potentials from Species-Specific Metabolic Networks*", IBSB 2008, Genome Informatics 20: 135-148 (2008)

These two pieces of work are inspired by physical models of metabolic networks. The work I presented at this year's IBSB tries to produce a similar model, but from a data-driven and pathway mining perspective. As such this work presents a merging of ideas which directly resulted from attendance of previous IBSB.

3) Response and Feedback

The motivation behind the ideas presented in my work led to numerous questions from interested researchers from Germany. This was also bolstered by my recent stay in Professor Edda Klipp's laboratory. The questions centered around the similarity of the ideas presented by Christian et al (2007) and Basler et al. (2008) to the work presented. The key discussion points were on the extent to which the analysis experimental data

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supports the results of physical models. It an interesting point as the two research methodologies appear very different on first inspection, but the results they yield are often complementary. The limitations of the work presented are the simplifications that must be made to overlay the data onto metabolic network. Such simplifications are not necessarily for the physical models, and therefore the questions either remarked on the complementary nature of the results with respect to physical modeling, or on the biological interpretation of the results in the face of the simplifications. Ideally research such as this would provide solid ground for collaborative research projects which are a direct result of the IBSB conferences.

5) Recreational Activities

The recreational activities of the conference involve a cruise and lobster BBQ on Spectacle Island, BBQ along the Charles river, and a bus tour introducing the long history of Boston.

Open Air Classical Music Performance On the Charles River



View Of Boston From Spectacle Island

