

4<sup>th</sup> International Conference and Exhibition on

# Metabolomics & Systems Biology

April 27-29, 2015 Philadelphia, USA

## Brain response during sleep estimated from NMR metabolomics

Ubeydullah E R, Arjun Sengupta, Elizabeth Harders, Phillip W Gehrman and Aalim M Weljie  
University of Pennsylvania, USA

Sleep related disorders such as insomnia, parasomnias, sleep apnea and narcolepsy could be better understood by studying Brain activity during sleep and wakefulness. Increasing evidence also points to the bidirectional interaction of sleep and metabolism. However, simple and quantitative test to estimate brain function related to sleep and metabolism is still absent. We profiled the blood serum metabolome of healthy individuals every 2 hours over a period of 48 hours that included regular sleep and wakefulness periods using NMR spectroscopy. Brain activity of the participants was monitored via overnight polysomnography. Multivariate regression modelling was used to correlate these two different data sets. Encouraging results were observed suggesting the possibility of estimation of brain activity during sleep. These results have the potential to uncover the connection of altered brain function and metabolic biochemistry in dysregulated sleep.

[dr.ubeydullah@gmail.com](mailto:dr.ubeydullah@gmail.com)

Notes: