

In10-2

**NEAR INFRARED BIO-SPECTROSCOPY : APPROACHES FOR
MEASUREMENTS IN CRITICAL CARE**

David Burns

*McGill University, Otto Maass Building, Montreal,
Quebec H3A 2K6 CANADA*

Near infrared, diffuse reflectance spectroscopy has shown significant potential for in vitro and in vivo assessment of metabolic status. However, the complexity of living samples can lead to ambiguous results. This presentation will focus on methods that provide controls for scattering and absorption estimation in tissue. For robust estimations, normalization procedures will be shown which can greatly improve interpretability of results. Normalization based on time, location and spectral property will be shown with data from models, tissue phantoms and in vivo measurements. In particular, interpretation of NIR spectra associated with major respiratory constituents will be examined. Measurement of constituents such as hemoglobin, myoglobin, tissue edema, and lactate will be shown. Results suggest that NIR may provide a valuable tool for physiological monitoring in critical care research and practice.