

Here is a selection of the latest papers by BMSS members:-

Translation of exhaled volatile analyses to sport and exercise applications.

Heaney LM, Lindley MR.

Metabolomics 13,139 (2017).

This review article examines the increasing research in exhaled breath analyses and details initial steps into applying these technologies for exercise-based interventions. Studies have been primarily applied to the measurement of chemical exposure during and/or following exercise but show initial promise for use in competitive sport, most notably for breath testing in the development of rapid/on-line anti-doping screens.

Proteomic biomarkers of heart failure.

Israr MZ, Heaney LM, Suzuki T.

Heart Failure Clinics (2017); doi: 10.1016/j.hfc.2017.08.010

This article focuses on the array of common and novel protein-based biomarkers that provide diagnostic

and prognostic information in heart failure. Biomarkers are used to assist clinicians with timely diagnosis, prognosis and risk prediction of patients for personalised treatment. An increasing number of novel protein biomarkers have been identified using mass spectrometry-based techniques to further aid clinical decision making.

Quantification of lignin and its structural features in plant biomass using ^{13}C lignin as internal standard for pyrolysis-GC-SIM-MS.

Van Erven G, de Visser R, Merckx DWH, Strolenberg W, de Gijssel P, Gruppen H, Kabe MA.

Analytical Chemistry 89, 10907–10916 (2017).

Understanding the mechanisms underlying plant biomass recalcitrance at the molecular level can only be achieved by accurate analyses of both the content and

structural features of the molecules involved. Our research is aimed at specific lignin quantification with concurrent characterization of its structural features. Hereto, a novel polymeric ^{13}C lignin was used as internal standard (IS) for lignin quantification by py-GC-SIM-MS.

Themis: Batch Preprocessing for Ultrahigh-Resolution Mass Spectra of Complex Mixtures

Gavard R, Rossell D, Spencer SEF, and Barrow MP.

Analytical Chemistry, 2017, DOI: 10.1021/acs.analchem.7b02345

We present a new algorithm to pre-process replicate data sets. The main features of the algorithm are: optional use of quality control, ensuring comparable magnitudes across replicates, peak alignment, and the use of an adaptive mixture model-based strategy to help distinguish true peaks from noise. Themis is available for academic use via a server.

Paper accepted?

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