

Study Group / Task Force Name: **Bioanalytics Study Group**

Study Group / Task Force Members and Affiliations:

**Head of Study Group: George Horvai** – Hungarian Chemical Society

**Wolfgang Buchberger** – ex officio

**Hendrik Emons** –JRC, European Commission

**Guenter Gauglitz** – Gesellschaft Deutscher Chemiker (GDCh)

**Jose M. Pingarron** – Spanish Royal Society of Chemistry

**Jan Labuda** – Slovak Chemical Society

**Raluca-Ioana van Staden** – Romanian Chemical Society

**Jacobus Frederick van Staden** – South African Chemical Institute

Objectives:

The aim of the Bioanalytics study group is to search ways for bringing closer the analytical and bioanalytical chemistry community.

Activities and Outputs in 2015-2016 (e.g. reports, publications, seminars, meetings):

In the journal Analytical and Bioanalytical Chemistry (ABC) the number of board members related to bioanalytics was increased to image the increasing number of papers submitted and published in ABC presenting either new bioanalytical instrumental tools or demonstrating novel bioanalytical applications.

#### *Research and education*

##### Romania

There were more than 50 publication in ISI journals from Universities and research institutes from Romania in the field of bioanalysis in this period. Also, many PhD students had projects on the field of bioanalysis. Bioanalysis is also one of the main subjects taught in the Faculties of Chemistry in Romanian universities.

##### Germany

The aim is to strengthen research and master programs at universities in the area of bioanalytics. Looking in Germany at analytical chairs, more and more bioanalytical applications to environment or healthcare are in focus. Accordingly, lectures with bioanalytical contents take a higher percentage of curriculum.

##### Slovakia

Bioanal Chem / Bioanal Methods are taught at the master level in Bratislava. In the lab of Bioanalytical analysis at the Slovak University of Technology in Bratislava there is an international team of researchers and students (Czech Rep, Greece, Romania), particularly on the topic of DNA based biosensors and DNA based tests of interactions of chemicals, physical factors and nanomaterials with the biomolecule.

#### *Meetings*

On the program of the 2016 EUCHEMS Chemistry congress in Seville there will be a separate session on bioanalytics. The main (invited) lecture in this session will be presented by professor Jonas Bergquist from Sweden. In another session the invited lecture given by Roma Tauler will discuss the chemometrics of high throughput omics.

## Romania

1. Analytical and Nanoanalytical Methods for Biomedical and Environmental Sciences, Brasov, June 29th- July 1st 2016, organized by Transilvania University of Brasov, Romania.
2. Romanian International Conference on Analytical Chemistry: Analytical Conference for a Better Life, Iasi, 28-31 August, 2016.
3. Young scientists joining forces for excellence in biomaterials research, Bucharest, May 28th -29th 2015

## Germany

At Analytica in ABC Spotlight on Nanoworld the majority of lectures dealt with bioanalytical tools to solve problems with nanoparticles. In Tübingen bioanalytics in environment were main part of a seminar on water analysis in 2015. Recently another workshop discussed bioanalytics to ensure water quality (local and Lake of Constance). In Munich the sensor group AMA had a meeting with a lecture on biosensing.

## Activities planned for 2016-2017:

Our study group period has been 2013-2016. Therefore at this year's annual meeting it has to be decided if the work should be continued and if yes, in what direction.

Biological processes and/or systems are more and more widely used in analytical procedures (PCR, immunoassays, immunoaffinity, etc.) and on the other hand biological samples/components are among the prime targets for analytical tasks (DNA/RNA, proteins, cells, tissues, etc.). This observation might project a natural convergence of analytical and bioanalytical chemistry. Yet the wide range of scientific backgrounds and affiliations of scientists active in bioanalytical chemistry may also lead to a fragmentation into many small interest groups. If this happens, analytical chemistry may loose ground, while bioanalytical chemists will probably not become aware of the accumulated knowledge in analytical chemistry.

It is suggested that the further fate of dealing with bioanalytics by DAC be thoroughly discussed in Seville by DAC leadership, possibly by involving the professors Bergquist and Miro, who are invited lecturers and at the same time influential analytical journal editors.

## Other developments for 2016-2017:

Prof. Labuda had requested to include Bioanalytical methods into to the new IUPAC Compendium of Terminology in Analytical Chemistry (4th edition) prepared for publication in 2018. The chapter was prepared by quite large group of authors. At present, Terminology of bioanalytical methods (IUPAC Recommendations 201x) is finalized for the publication in Pure and Applied Chemistry next year.

Strengthening bioanalytics in ABC, topical collection of bioanalytical approaches in ABC, submission of research proposals dealing with waste water 4.0, lobbying bioanalytics for the next EU calls.

The 1st European Biosensors Symposium will be held on March 20-23 at Potsdam University (<http://ebs2017.com/about>).

Report submitted by: George Horvai

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