

Wednesday 14 Nov

Chair: Astrid Gräslund, Stockholm

- 13.15 – 14.15 Databases and software for NMR-based metabolomics
John Markley
National Magnetic Resonance Facility at Madison and the BioMagResBank, University of Wisconsin, Madison, USA
- 14.15 – 14.30 Multivariate methods and approaches to analyse NMR based metabolomics data
Johan Trygg
Chemistry
- 14.30 – 14.45 Elucidating metabolic regulation using NMR
Jürgen Schleucher
Medical Biochemistry and Biophysics
- 14.45 – 15.30 *Coffee break and* Inauguration of the Swedish NMR Core Facility
Carl Kempe, *Kempestiftelserna*
Lena Gustafsson, *Vice -Chancellor, UmU*
- 15.30 – 16.30 Breathing life into nucleic acids: Dynamics at atomic resolution
Hashim Al-Hashimi
Department of Chemistry and Biophysics, University of Michigan, Ann Arbor, USA
- 16.30 – 17.00 Speeding up NMR spectroscopy
Göran Karlsson
Director of the Swedish NMR Center, Gothenburg

About KBC

Six departments and two research units at Umeå University (UmU) and the Swedish University of Agricultural Sciences (SLU) are forming one large multi-disciplinary research centre: The Chemical Biological Centre (KBC- Kemiskt Biologiskt Centrum). Around 700 people are collaborating in a positive and creative environment in research and teaching. The KBC research school is organizing a graduate program for around 250 PhD students and each department offers a large variety of courses for bachelor and master students.

KBC is today a lively environment with scientific and social activities. We share scientific infrastructure, PhD and Postdoctoral programmes, administrative and technical service, lunch rooms, song (KBC choir), language (courses in Swedish) and gather all at our annual KBC Days with scientific and social activities.

Poster contributions

Lotta Berg, Chemistry

Understanding molecular recognition – Exploring ligand binding properties of Acetylcholinesterase

Sacha Escamez, Umeå Plant Science Centre

Developmental programmed cell death and secondary wall patterning in xylem tracheary elements: a matter of lytic potential?

Sophia Hansson, Ecology and Environmental Science

Re-thinking the record: Incorporation of radiometric tracers in peat and implications for estimating accumulation rates

Melis Kucukoglu, Umeå PlantScience Centre

Molecular regulation of vascular cambium identity and activity in trees

Peter Mathisen, Ecology and Environmental Science

Francisella tularensis: an evolutionary linkage between aquatic predation-resistant bacteria and mammalian pathogenic bacteria

Håkan Nilsson, Chemistry

Substrate water exchange in the $S_3Y_z \cdot$ state

Louise Norén, Umeå Plant Science Centre

Interplay between HEAT SHOCK PROTEIN 90 and HY5 controls PhANG expression in response to the GUN5 plastid signal

Ulf Persson, Medical Biochemistry and Biophysics

The C-terminus of Dpb2 is required for the interaction with Pol2 and for cell viability

Duong Ngoc Chau Phan, Chemistry

Characterizing the thermal formation of polychlorinated aromatics during waste incineration

Birte Reichstein, Ecology and Environmental Science

Coexistence mechanisms in size-structured mixed predation-competition systems

Tiva Sharifi, Physics

Investigation of nitrogen inclusion and formation of active sites in nitrogen-doped carbon nanotubes for oxygen reduction reactions

Gustaf Thomsson, Ecology and Environmental Science

Testing light to nutrient hypothesis in periphyton algal communities



KBC-DAYS 2012

Kemiskt Biologiskt Centrum

13 - 14 November
Stora hörsalen



www.kbc.umu.se

Tuesday 13 Nov

- 8.30 – 9.00 Registration
- 9.00 – 9.15 Welcome
Introduction and news at KBC
Per Gardeström
Scientific coordinator of KBC
- Chair: Gunnar Wingsle*
- 9.15 – 10.15 The modern proteomics toolbox and its applications in cell biology and biomedicine
Matthias Mann
Director, Max Planck Institute of Biochemistry, Martinsried/Munich, Germany
- 10.15 – 10.45 *Coffee break*
- Chair: Stefan Björklund*
- 10.45 – 11.00 The "new" member of the KBC family
Research at the Department of Physics
Thomas Wågberg
Member of the KBC group, Department of Physics
- 11.00 – 12.00 **New faculty members at KBC**
- Quantitative biology: How to build equations of molecules
Andreas Grönlund
*Umeå Plant Science Centre, UPSC
Plant Physiology*
- Incorporating some physics and chemistry into ecology
Mehdi Cherif
Ecology and Environmental Science
- Pfh1 DNA helicase moves with the replisome to promote replication fork progression and is a positive regulator of telomere length
Nasim Sabouri
Medical Biochemistry and Biophysics
- Deciphering the role of protein dynamics in protein function: Computer simulation approaches
Kwangho Nam
Chemistry
- 12.00 – 12.30 **Poster Session I**
The KBC PhD students with midterm exam introduce their posters in short oral presentations (2 min. each)
- 12.30 – 13.45 *Lunch and Poster session II*

Tuesday 13 Nov

- Chair: Richard Bindler*
- 13.45 – 14.45 Aquatic methane – sources, fates, and implications for the global greenhouse gas balance
David Bastviken
Water and Environmental Studies, Linköping University
- 14.45 – 15.15 *Coffee break and poster viewing*
- Chair: Per Gardeström*
- 15.15 – 16.00 Epidermal cell and tissue polarity in the *Arabidopsis* root
Markus Grebe
*Umeå Plant Science Centre, UPSC
Plant Physiology*
- 16.00 – 17.00 Research infrastructures at KBC: Core Facilities, Platforms, User groups
Overview and examples
Per Gardeström
Scientific coordinator of KBC
- 17.00 – 18.00 Swedish science policy
Göran Sandberg
*Knut and Alice Wallenberg Foundation
(30 min. talk and 30 min. discussion)*
- 18.00 – 19.00 **Poster session III**
- 19.00 Dinner and presentation of the winner of the poster award



Scientists from the KBC departments, mainly UPSC, organized an open day at KBC on the European Fascination of Plants Day, 18 May 2012.

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- Chair: Mikael Akke, Lund*
- 9.00 – 10.00 NMR methods for structural studies of large RNAs and protein: RNA complexes
Michael Summers
Howard Hughes Medical Institute, Chemistry and Biochemistry Department, University of Maryland, Baltimore, USA
- 10.00 – 10.15 Modulation of a pre-existing conformational equilibrium tunes adenylate kinase activity
Magnus Wolf-Watz
Chemistry
- 10.15 – 10.30 Solid state NMR on membrane-protein assemblies: Insight into their role in diseases
Gerhard Gröbner
Chemistry
- 10.30 – 11.00 *Coffee break*
- 11.00 – 12.00 NMR Crystallography
Lyndon Emsley
Chemistry Department, Ecole Normale Supérieure de Lyon, France
- 12.00 – 13.00 *Lunch*



The new NMR spectrometer has arrived at KBC. Juergen Schleucher, Gerhard Gröbner and Tobias Sparrman together with Bruker staff, 19 October 2012.