

Regional Biophysics School
"Academician Radoslav K. Andjus"
(NERKA)

IMAGING NEUROINFLAMMATION

JUNE 17 – 20, 2016 | KOTOR, MONTENEGRO

MODERN METHODS OF
BIOPHYSICAL IMAGING AND
IMAGE ANALYSIS

INFLAMMATORY PHENOMENA
AND MARKERS OF
NEURODEGENERATIVE DISEASES

MRI, MRS, PET, EPRI, non-linear microscopy- dual
photon fluorescence, Fluorescence Correlation
Spectroscopy & microscopy, PALM, STED, CARS,
digital holographic microscopy

Regional Biophysical School "Academician Radoslav K. Andjus" (NERKA) was established in honor of **Professor R.K. Andjus** (1926-2003) an internationally recognized scientists from the University of Belgrade, a member of Montenegrin and Serbian academies of sciences and arts and one of the founders of Institute for Marine Biology in Kotor.

This is the sixth school, organized traditionally by the **Biophysical Society of Serbia** this time with the sponsorship of the **International Union for Pure and Applied Biophysics (IUPAB)**.



IUPAB fellowships for young researchers (age < 35) available

CONFIRMED LECTURERS (in alphabetic order):

Prof. **Pavle Andjus**, PhD (Fac of Biology, Univ of Belgrade, Serbia)

Andrew Clayton, PhD (Swinburne Univ of Technology, Hawthorn, Australia)

Marko Daković, PhD (Fac of Physical Chemistry, Univ of Belgrade, Serbia)

Irena Dujmović, MD (School of Medicine, Univ of Belgrade, Serbia)

Diego Gomez-Nicola, PhD (Univ of Southampton, SGH, UK)

Prof. **Robert Harris**, PhD (Karolinska Institutet, Stockholm, Sweden)

Branislav Jelenković, PhD (Institute of Physics, Univ of Belgrade, Serbia)

Prof. **Lars Klimaschewski**, MD (Medical Univ of Innsbruck, Austria)

Aleksandar Krmpot, PhD (Institute of Physics, Univ of Belgrade, Serbia)

Prof. **Slobodan Macura**, PhD (Mayo Clinic, Rochester, Minnesota, USA)

Miloš Mojović, PhD (Fac of Physical Chemistry, Univ of Belgrade, Serbia)

Prof. **Hugh Perry**, PhD (Ctr for Biological Sciences, Univ of Southampton, UK)

Boris Šakić, PhD (McMaster Univ, Hamilton, Canada)

Vladana Vukojević, PhD (Karolinska Institutet, Stockholm, Sweden)



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Regional Biophysics School
"Academician Radoslav K. Andjus" (NERKA)

Imaging neuroinflammation

17 – 20 June 2016, Kotor, Montenegro

Venue:

Institute for Marine Biology, Kotor, Montenegro

<http://www.ibmk.org/>

Organizers:

Chairs:

Prof. **Pavle Andjus**, PhD – Faculty of Biology,
University of Belgrade, Serbia

Boris Šakić, PhD – McMaster University,
Hamilton, Canada

Organizing committee:

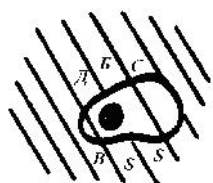
Miroslav Živić, PhD (RS)

Milena Milošević, PhD (RS)

Andrej Korenić, PhD (RS)

Mirko Djurović, PhD (MNE)

Supported by:



Sponsored by:



IUPAB

CONNECTING THE
WORLD OF BIOPHYSICS

Important facts

Registration fee:

150 € (to be paid after acceptance of application)

Accommodation:

private villas, walking distance from venue - managed by local organizer

Fellowships:

Fellowships to attend the School sponsored by IUPAB will be distributed to young researchers (< 35) on competitive basis and will consist of **300 €** and/or price of accommodation + registration fee waiver.

Applications (short CV and letter of recommendation) to be sent to clm@bio.bg.ac.rs until **March 28th, 2016**.

Travel:

Help offered by organizing committee and the exclusive touristic agency IMPALA (info@impalayu.com; www.impalayu.com)



For further info contact:

clm@bio.bg.ac.rs

<http://clm.bio.bg.ac.rs/>



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Each school has a different theme, and thematic objective of this school is to introduce modern methods of **biophysical imaging** and **image analysis** in studies of **inflammatory phenomena and markers of neurodegenerative diseases**. It is also envisaged to rise discussion among the participants on the translational value of these techniques and the clinical relevance of presented experimental markers.

The techniques covered will be **MRI, MRS, PET, EPRI**, and *advanced microscopy non-linear microscopy – dual photon fluorescence*, fluorescence correlation spectroscopy (**FCS**) & microscopy, *super-resolution microscopy (PALM, STED)*, *raman spectroscopy (CARS)*, **digital holographic microscopy**.

A multidisciplinary faculty is chosen ranging from fields of **physics** (applications of laser technology and advanced microscopy), **physical chemistry** (magnetic resonance techniques and applications), **biology** (experimental models of neurodegenerative diseases), and **medicine** (clinical studies and markers of neuroinflammation).

The confirmed lecturers (in alphabetic order) are:

Prof. Pavle Andjus, PhD – Fac of Biology, Univ of Belgrade, Serbia

Andrew Clayton, PhD – Swinburne Univ of Technology, Hawthorn, Australia

Marko Daković, PhD – Fac of Physical Chemistry, Univ of Belgrade, Serbia

Irena Dujmović, MD – School of Medicine, Univ of Belgrade, Serbia

Diego Gomez-Nicola, PhD – Univ of Southampton, Southampton General Hospital, UK

Prof. Robert Harris, PhD – Karolinska Institutet, Stockholm, Sweden

Branislav Jelenković, PhD – Institute of Physics, Univ of Belgrade, Serbia

Prof. Lars Klimaschewski, MD – Medical Univ of Innsbruck, Austria

Aleksandar Krmpot, PhD – Institute of Physics, Univ of Belgrade, Serbia

Prof. Slobodan Macura, PhD – Mayo Clinic, Rochester, Minnesota, USA

Miloš Mojović – Fac of Physical Chemistry, Univ of Belgrade, Serbia

Prof. Hugh Perry, PhD – Centre for Biological Sciences at the Univ of Southampton, UK

Boris Šakić, PhD – McMaster Univ, Hamilton, Canada

Vladana Vukojević, PhD – Karolinska Institutet, Stockholm, Sweden

Welcome to Biophysics at the Mediterranean!

Prof. Pavle Andjus,

President of Serbian Biophysical Society

Friday, 17 June 2016

15:00 – 16:00 *Registration and snacks*

16:00 Welcome address

16:30 – 18:30

Boris Šakić, McMaster University (CAN): “Imaging of neuroinflammation and neurodegeneration in an animal model of CNS Lupus”

19:00 *Dinner – get together and meet the speaker*

Saturday, 18 June 2016

Advanced microscopy and applications

08:00 – 09:00 *On site breakfast and snacks get together*

09:00 – 10:30

Branislav Jelenković, Institute of Physics, University of Belgrade (RS): „Physical principles of advanced microscopy and the use of lasers in biology and medicine.”

10:30 – 12:00

Aleksandar Krmpot, Institute of Physics, University of Belgrade (RS): „Structured light and non-linear microscopy.”

12:00 – 14:00 *Lunch brake*

14:00 – 15:30

Andrew Clayton, Swiburne University of Technology (AUS): “Imaging molecular interactions at the cell surface with multidimensional microscopy.”

15:30 – 17:00

Vladana Vukojević, Karolinska Institutet, Stockholm (SE): “Live cell studies by methods with single-molecule sensitivity: Fluorescence Correlation Spectroscopy and Photoactivated Localization Microscopy.”

17:00 – 18:30

Robert Harris, Karolinska Institutet, Stockholm (SE): “Accessing inflammatory and neurodegenerative biomarkers.”

19:00 *Dinner – get together and meet the speakers*

Sunday, 19 June 2016

Magnetic resonance imaging and applications

08:00 – 09:00 *On site – breakfast and snacks get together*

09:00 – 10:30

Slobodan Macura, Mayo Clinic, Rochester (USA): „Preclinical Nuclear Magnetic Resonance Microscopy and Spectroscopy in Neuroinflammation.”

10:30 – 12:00

Marko Daković, University of Belgrade (RS): „Diffusion weighted MRI and MR spectroscopy in research of neuroinflammatory processes.”

12:00 – 14:00 *Lunch break*

14:00 – 15:30

Caterina Bendotti, “Mario Negri” Institute for Pharmacological Research – Milano (IT): „Insights on the mechanisms of disease progression from two mouse models of inherited amyotrophic lateral sclerosis”

15:30 – 16:30

Miloš Mojović, University of Belgrade (RS): “EPR *in vivo* spectroscopy for assessment of oxidative status in neurodegeneration.”

16:30 – 17:30

Pavle Andjus, University of Belgrade (RS): “Combining magnetic resonance imaging with advanced microscopy in studies of neurodegenerative processes.”

18:00 *Boat excursion & Dinner*

Monday, 20 June 2016

From bench to bedside

08:00 – 09:00 *On site breakfast and snacks get together*

09:00 – 10:30

Hugh Perry, University of Southampton (UK): "Microglia the cornerstone of neuroinflammation."

10:30 – 12:00

Lars Klimaschewski, Medical University of Innsbruck (AU): “Advanced fluorescence microscopy for molecular tracing in nervous system.”

12:00 – 14:00 *Lunch break*

14:00 – 15:30

Irena Dujmović, University of Belgrade (RS): “Neuroinflammation in multiple sclerosis and neuromyelitis optica: spectrum disorders: from microscopy to magnetic resonance imaging techniques.”

15:30 – 17:00

Diego Gomez-Nicola, University of Southampton (UK): “Modulating the self-repairing potential of the brain in chronic neurodegeneration.”

17:00 – 18:00

Wrap up discussion panel – “Translational value of biophysical imaging.”
(moderators **B. Šakić, Pavle Andjus**)