



## WORKSHOP

# „Biomedical signal analysis and processing for diagnostics“

**November 28-30, 2019**

**organized by the Institute of Physiology, The Czech Academy of Sciences**

### Venue:

**November 28:**

**Institute of Physiology CAS, Meeting Room, building DaI (ground floor), Vídeňská 1083, Prague 4**

**November 29:**

**Institute of Physiology CAS, Lecture Hall, building A (ground floor), Vídeňská 1083, Prague 4**

**November 30:**

**Equilibrium Hall, Dřevná 2, Prague 2**

*Strategy AV21: Diagnostic Methods and Techniques*

## **November 28**

*(Venue: Institute of Physiology CAS, Biomathematics Meeting Room, building Dal (ground floor), Vídeňská 1083, Prague 4)*

**9:15 Introduction**

**9:30 – 10:00 Daniel Hadraba**, Institute of Physiology, CAS  
**Sound analysis for real-time detection of bronchial obstruction**  
by D. Skalický, D. Hadraba and F. Lopot, in cooperation of Charles University (Department of Anatomy and Biomechanics), Czech Technical University (Faculty of Mechanical Engineering), and Czech Academy of Sciences (Institute of Physiology)

**10:00 – 10:30 Michal Cifra**, Institute of Photonics and Electronics, CAS  
**Pulsed electric field for modulation of cytoskeletal systems**

*10:30 – 11:00 Coffee break*

**11:00 – 11:30 Radim Skoupý**, Institute of Scientific Instruments, CAS  
**Reduction of the shrinkage of embedding resins used in imaging of biologic samples, achieved by their quantitative analysis in low-voltage STEM**

**11:30 – 12:00 Filip Mika**, Institute of Scientific Instruments, CAS  
**Energy Selective Electron Detection and Analysis of non-conductors in Scanning Electron Microscopy**

*12:00-13:30 Lunch break*

**13:30 – 14:00 Daniel Jiráček**, Institute for Clinical and Experimental Medicine  
**19F MR probe with tunable biodegradability**

**14:00 – 14:30 Eva Dražanová**, Institute of Scientific Instruments, CAS  
**Pharmacological ASL MRI technique in preclinical research**

*14:30 – 15:00 Coffee break*

**15:00 – 15:30 Zenon Starčuk**, Institute of Scientific Instruments, CAS  
**Spectroscopic imaging in small laboratory animals**

**15:30 – 16:00 Radovan Smíšek**, Institute of Scientific Instruments, CAS  
**Advanced ECG analysis techniques**

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## **November 29**

(Venue: Institute of Physiology CAS, Lecture Hall, Building A (ground floor), Vídeňská 1083, Prague 4)

**9:45 Introduction**

**10:00 – 11:00 Jan Pokorný, Institute of Physics CAS, Prague**  
**Ordered water layers can reduce noise**

*11:00 – 11:30 Coffee break*

**11:30 – 12:30 Daniel Fels, Laboratory of Biophysical Cell Communication, Basel, Switzerland**  
**Electromagnetic communication in the Ciliate *Paramecium caudatum***

*12:30 – 14:00 Lunch break*

**14:00 – 15:00 Irina S. Ryzhkina, Arbuzov Institute of Organic and Physical Chemistry, FRC Kazan Scientific Center, Russian Academy of Sciences**  
**New approaches for the development of physicochemical screening of aqueous solutions of substances capable of exhibiting bioeffects in the low-concentration range**

*15:00-15:30 Coffee break*

**15:30 – 16:30 John Stuart Reid, Sonic Age Ltd, Acoustic-Physics Research, United Kingdom**  
**Testing a 2500 year-old medical hypothesis: If music brings new life to old blood cells - play on!**

**16:30 – 17:30 Giuseppe Vitiello, Department of Physics "E. R. Caianiello", University of Salerno, Italy**  
**Water, long range correlations, fractals and deformed coherent states**

*17:30 – 18:00 Discussion*

Venue: Institute of Physiology CAS, Biomathematics Meeting Room, building DaI (ground floor), Vídeňská 1083, Prague 4:

***18:00 – 20:00 Visit to the Bioimaging Facility, free discussion and refreshments***

## **November 30**

*(Venue: Equilibrium Hall, Dřevná 2, Prague 2)*

**Lecture for public audience with consecutive translation from English to Czech**

**10:00 – 12:00 Annaliese Reid, Sonic Age Ltd, Acoustic-Physics Research, United Kingdom**  
**Cymatherapy: Healing with Sound**

*12:00 – 12:30 Discussion and refreshments*

**12:30 – 13:15 Gong concert by Dana Šitnerová**

## **REGISTRATION**

### **Contact and registration for event on November 28-29:**

- No registration fee
- Registration: till November 25, 2019 - e-mail: [pavla.choteborska@fgu.cas.cz](mailto:pavla.choteborska@fgu.cas.cz)
- For special requests contact Lucie Kubínová, e-mail: [lucie.kubinova@fgu.cas.cz](mailto:lucie.kubinova@fgu.cas.cz)

**Address of event: Institute of Physiology CAS, Vídeňská 1083, Prague 4**

**Public transport:** buses from Kačerov - bus 193, stop: Zelené domky, bus 138, 203 stop: Ústavy akademie věd

**Car:** Parking is available on campus.

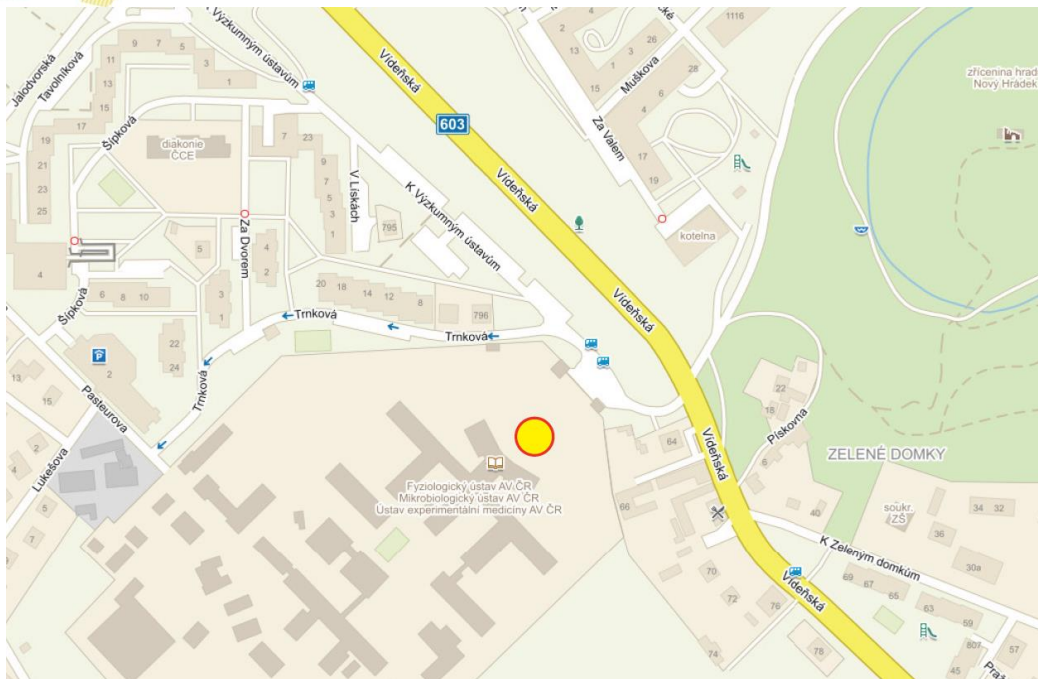
### **Contact and registration for event on November 30:**

- Registration is compulsory, due to a limited number of seats
- Registration till November 20, 2019 – e-mail: [lucie.kubinova@fgu.cas.cz](mailto:lucie.kubinova@fgu.cas.cz)

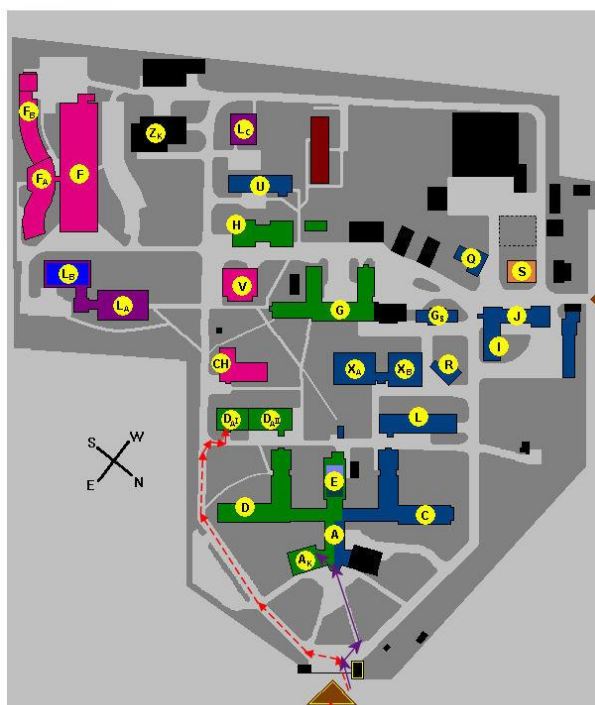
**Address of event: Equilibrium Hall, Dřevná 2, Prague 2**

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*Strategy AV21: Diagnostic Methods and Techniques*



## ACADEMY OF SCIENCES OF THE CZECH REPUBLIC - PRAGUE KRČ



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entrance gate to the Institute

- MAP LEGEND:**
- INSTITUTE OF MICROBIOLOGY
  - A Administration and Services
  - C Management, Laboratories
  - G<sub>1</sub> Offices
  - J Service Workrooms
  - L Laboratories
  - Q Greenhouse
  - R Editorial Office of Folia Microbiologica
  - X<sub>A</sub> Laboratories
  - X<sub>B</sub> Biotechnological Pilot Plant
  - U Molecular Structure
  - A KRC AREA ADMINISTRATION
  - Z<sub>1</sub> Boiler House
  - INSTITUTE OF PHYSIOLOGY
  - A Administration and Services
  - A<sub>1</sub> Scientific Information Department
  - D Management, Laboratories
  - D<sub>1</sub> Biomathematics
  - D<sub>2</sub> Laboratories
  - E Radiometry
  - G H Experimental Models
  - L<sub>A</sub> INSTITUTE OF EXPERIMENTAL MEDICINE
  - L<sub>C</sub> Laboratories
  - INSTITUTE OF MOLECULAR GENETICS
  - F Management, Laboratories
  - F<sub>1</sub> Lecture Hall
  - F<sub>2</sub> V CH Experimental Models
  - L<sub>B</sub> F INSTITUTE OF BIOTECHNOLOGY
  - E INSTITUTE OF EXPERIMENTAL BOTANY
  - E INSTITUTE OF ANALYTICAL CHEMISTRY
  - S INSTITUTE OF ANIMAL PHYSIOLOGY AND GENETICS
  - BUSINESS/STORE BUILDINGS
  - Lodging House
  - Main Porter's Lodge
  - ▲ Main Entrance

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