



შოთა რუსთაველის საერთაშორისო
ეროვნული სამეცნიერო ფონდი
SHOTA RUSTAVELI NATIONAL SCIENCE
FOUNDATION OF GEORGIA

ADVANCES IN NEUROSCIENCE: A Multidisciplinary Event

29 June – 5 July
2022

GENERAL INFORMATION

Dates: 29 June – 5 July, 2022

Venue: Hotel Oasis - <http://hoteloasis.ge>
16 Batumi str., Chakvi, 6200, Georgia
Tel: +995 592296060
Mail: info@hoteloasis.ge

Language: English

Organizers: Ilia State University

Funding: Shota Rustaveli National Science Foundation,
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<https://anme.iliauni.edu.ge>

WELCOME MESSAGE

WELCOME to Chakvi for the “Advances in Neuroscience – a Multidisciplinary Event”. The event is designed to focus on a multidisciplinary, in-depth approach to the major topics in the field of neuroscience. Throughout the event a wide range of keynote lectures, plenary lectures, poster sessions, learning/training sessions, hands-on practicum experiences, topic-focused debates are considered. The combined event will definitely provide students with challenging experience to discuss important issues in the field, to build up abilities for synthesis/integration of concepts and ideas, to develop critical thinking, to learn modern neuroscience techniques, and importantly, to learn basic skills for writing grant proposals/research papers. The important approach of the proposed event is to involve pre-doctoral students/postdocs from different regions of the country. We are very grateful and honored to gather an exceptional group of highly-qualified speakers from different countries and different domains of Neuroscience.

We believe that the proposed event will be a rich combination of education, knowledge sharing, personal interactions, and inspiration for students’ involvement in Neuroscience research.

WEDNESDAY, JUNE 29, 2022

14.00 – 15.00 LUNCH

17:00 – 17:45 REGISTRATION. COMBINED EVENT: INTRODUCTION AND ORIENTATION

SESSION 1. Chairs – Prof. David Mikeladze and Prof.Lali Shanshiashvili

17:45 – 18:15 PLENARY LECTURE: Allergen identification in genetically modified maize by multiplex PCR for neuropathy prevention.

Neli Datukishvili, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

18:15 – 18:30 DISCUSSION

18:30 - 19:30 KEYNOTE LECTURE: Exploring neuroscience at the nanoscale.

Jeremy Ramsden, *The University of Buckingham, England*

19:30 –21:00 DINNER

THURSDAY, JUNE 30, 2022

08:30 – 09:30 BREAKFAST

09:30 – 10:00 SCHOOL ACTIVITY: Electrophoresis on PAGE gels

LESSON 1: Preparation of solutions for electrophoresis.

Nana Narmania, Maia Sepashvili, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

10:00 – 10:30 LESSON 2: Preparation of PAGE gels and their polymerisation

Nana Narmania, Maia Sepashvili, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

10:30 – 13:00 **LESSON 3:** Loading samples and running the gel
Nana Narmania, Maia Sepashvili, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

13:00 – 14:00 LUNCH

SESSION 2. CHAIR – Prof. Laura Palagini

14:00 – 15:00 **KEYNOTE LECTURE:** Stress, sleep and psychopathology - a relationship lasting a lifetime.
Laura Palagini, *Sleep Center and Pregnancy Center for Psychiatric Disorders, University Hospital of Ferrara, Italy.*

15:00 – 15:30 **SCHOOL ACTIVITY:** Western blotting

LESSON 1: Preparation transfer buffer. Gel washing and preparation for next stages.

Elene Zhuravliova, Tamar Barbakadze, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

15:30 – 16:00 **LESSON 2:** Assembly of western blotting “sandvich” and running western blotting.

Elene Zhuravliova, Tamar Barbakadze, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

16:00 – 16:45 **LESSON 3:** Bloking the membranes and leave the whole night. Preparation of solutions for next treatment of membrane.

Nana Narmania, Maia Sepashvili, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

16:45 – 17:15 **PLENARY LECTURE:** Predisposition to learn and learning-induced molecular changes in memory of visual imprinting in chicks.

Revaz Solomonias, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

17:15 – 17:30 DISCUSSION

- 17:30 – 18:30** **KEYNOTE LECTURE:** Nitric oxide – induced cellular stress.
Judit Bator, *Department of Medical Biology and Central Electron Microscopic Laboratory of the University of Pecs Medical School, Pecs, Hungary*
- 18:30 – 19:30** **KEYNOTE LECTURE:** Chronic insomnia of childhood: clinical aspects and neurobehavioral consequences.
Oliviero Bruni, *Department of Developmental and Social Psychology, Sapienza University, Rome, Italy*
- 19:30 – 21:00** **DINNER**

FRIDAY, JULY 1, 2022

- 08:30 – 09:30** **BREAKFAST**
- 09:30 – 10:00** **SCHOOL ACTIVITY:** Staining of nitrocellulose membrane with proper antibodies.
- LESSON 1:** Preparation of solutions
Nana Narmania, Maia Sepashvili, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*
- 10:00 – 11:30** **LESSON 2:** Incubation of membrane with primary antibodies.
Nana Narmania, Maia Sepashvili, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

SESSION 3. Chairs – Prof. Nato darchia and Prof. Lali Shanshiashvili

- 11:30 – 12:15** **PLENARY LECTURE:** The methods of clinical sleep investigation
Katerina Espa Cervena, *Sleep Center CENAS, Geneva, Switzerland*
- 12:15 – 12:30** **DISCUSSION**

- 12:30 – 13:00** **SCHOOL ACTIVITY:** The interpretation of sleep EEG recordings
Katerina Espa Cervena, *Sleep Center CENAS, Geneva, Switzerland*
- 13:00 – 14:00** **LUNCH**
- 14:00 – 15:30** **SCHOOL ACTIVITY:** Staining of nitrocellulose membrane with proper antibodies
LESSON 2 (continued): Incubation of membrane with primary antibodies.
Tamar Barbakadze, Elene Zhuravliova, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*
- 15:30 – 16:15** **LESSON 3:** Washing of membrane
Tamar Barbakadze, Elene Zhuravliova, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*
- 16:15 – 18:00** **LESSON 4:** Nitrocellulose membrane developing method
Tamar Barbakadze, Elene Zhuravliova, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*
- 18:00 – 18:30** **PLENARY LECTURE:** Sigma-receptor-1 may participate in the RAC dependent tumorigenesis.
David Mikeladze, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*
- 18:30 – 18:45** **DISCUSSION**
- 18:45 – 19:15** **PLENARY LECTURE:** Neuroplactyicity – link to brain maturation.
Tinatin Tchintcharauli, *Child Development Institute, Ilia State University, Tbilisi, Georgia*
- 19:15 – 19:30** **DISCUSSION**
- 19:30 – 21:00** **DINNER**

SATURDAY, JULY 2, 2022

08:30 – 09:30 BREAKFAST

09:30 – 11:30 SCHOOL ACTIVITY. The Nissl staining

LESSON 1: Visualization of neurons on nervous tissue sections.

Mzia Zhvania, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

11:30 – 13.00 LESSON 2: Visualization of glial cells on nervous tissue sections.

Mzia Zhvania, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

13.00 - 14.30 LUNCH

14:30 – 16:30 SCHOOL ACTIVITY: Training session on success in publishing peer reviewed research papers.

- Introductory; setting exercise (14:30 - 15:00)
- **Homework** - Preparation of the manuscript draft - work in a groups.
- Work by students on exercise (15:00 - 16:00)
- Review of students' work (16:00 - 16:30)

Jeremy Ramsden, *The University of Buckingham, England*

SESSION 4. Chair – Prof. Nato Darchia

16.30 – 17.00 POSTER SESSION I - short reports and discussion

17:00 – 18:00 KEYNOTE LECTURE: Scale-free and oscillatory measures of fundamental sleep regulatory processes in humans.

Robert Bodizs, *Institute of Behavioural Sciences, Semmelweis University, Budapest, Hungary*

18:00 – 19:30 POSTER SESSION II - short reports and discussion

19:30 – 21:00 DINNER

SUNDAY, JULY 3, 2022

08:30 – 09:30 BREAKFAST

09:30 – 10:30 SCHOOL ACTIVITY: The International 10-20 system of electrode placement

LESSON 1: Measurement Instructions.

Tamar Basishvili, *Tengiz Oniani Laboratory of Sleep-Wakefulness Cycle Study, Ilia State University, Tbilisi, Georgia*

Irma Khachidze, *I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

10:30 – 11:00 LESSON 2: Patient preparation.

Tamar Basishvili, *Tengiz Oniani Laboratory of Sleep-Wakefulness Cycle Study, Ilia State University, Tbilisi, Georgia*

11:00 – 13:30 LESSON 3: Practice on electrode application

Tamar Basishvili, Marine Eliozishvili, *Tengiz Oniani Laboratory of Sleep-Wakefulness Cycle Study, Ilia State University, Tbilisi, Georgia*

Irma Khachidze, *I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

13:30 – 14:30 LUNCH

SESSION 5. Chair – Prof. Revaz Solomonias

14:30 – 15:00 PLENARY LECTURE: Epileptogenesis and its inhibition by myoinositol”

Giga Gamkrelidze, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

15:00 – 15:15 DISCUSSION

15:15 – 15:45 PLENARY LECTURE: Study of EEG characteristics in patients with CNS disorder using “EEGHUB.GE” database.

Irma Khachidze, *I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

15:45 – 16:00 DISCUSSION

16:00 – 17:30 SCHOOL ACTIVITY: Scoring of EEG recordings

LESSON 1: Sleep stage scoring criteria and practice
Tamar Basishvili, Marine Eliozishvili, Tengiz Oniani
Laboratory of Sleep-Wakefulness Cycle Study, Ilia State University, Tbilisi, Georgia

17:30 – 18:30 KEYNOTE LECTURE: Education and Research – New Perspectives

Ferhan Sagin, *Ege University Medical Faculty, Izmir, Turkey*

18:30 – 19:00 SCHOOL ACTIVITY: Sleep-Wake pattern and daily activity assessment

LESSON 1: What is an Actiwatch?

Nato Darchia, *Tengiz Oniani Laboratory of Sleep-Wakefulness Cycle Study, Ilia State University, Tbilisi, Georgia*

19.00 – 20.00 DINNER

20.00 SOCIAL EVENT

MONDAY, JULY 4, 2022

08:30 – 10:00 BREAKFAST

10:00 – 11:30 SCHOOL ACTIVITY: Training session on success in grant proposal writing

Ferhan Sagin, *Ege University Medical Faculty, Izmir, Turkey*

11:30 – 13:00 SCHOOL ACTIVITY: Sleep-Wake pattern and daily activity assessment

LESSON 2: Practice to analyze, manage, and export recorded activity data

Nato Darchia, Tamar Basishvili, Marine Eliozishvili,
Tengiz Oniani Laboratory of Sleep-Wakefulness Cycle Study, Ilia State University, Tbilisi, Georgia

13.00 – 14.30 LUNCH

14:30 – 16:00 SCHOOL ACTIVITY: FEBS Networking opportunities

Ferhan Sagin, *Ege University Medical Faculty, Izmir, Turkey*

16:00 – 16:30 SCHOOL ACTIVITY: Scoring of EEG recordings

LESSON 1: Focus group on sleep EEG.

Robert Bodizs, *Institute of Behavioural Sciences, Semmelweis University, Budapest, Hungary*

16:30 – 17:30 SCHOOL ACTIVITY: Cognitive behavioral therapy (CBT) and insomnia

Laura Palagini, *Sleep Center and Pregnancy Center for Psychiatric Disorders, University Hospital of Ferrara, Italy.*

17:30 – 18:00 SCHOOL ACTIVITY: Evaluation of Homework on manuscript drafting

Lali Shanshiashvili, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

Nato Darchia, *Tengiz Oniani Laboratory of Sleep-Wakefulness Cycle Study, Ilia State University, Tbilisi, Georgia*

18:00 – 19:30 SCHOOL ACTIVITY: Game-show -questions on neuroscience topics covered during the school.

Lali Shanshiashvili, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

Nato Darchia, *Tengiz Oniani Laboratory of Sleep-Wakefulness Cycle Study, Ilia State University, Tbilisi, Georgia*

19.30. – 21.00 DINNER

TUESDAY, JULY 5, 2022

08:30 – 09:30 BREAKFAST

09:30 – 10:30 ROUND TABLE: Closing remarks / Event evaluation

David Mikeladze, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

Nikoloz Oniani, *Tengiz Oniani Laboratory of Sleep-Wakefulness Cycle Study, Ilia State University, Tbilisi, Georgia*

Revaz Solomonia, *Institute of Chemical Biology, Ilia State University and I. Beritashvili Centre of Experimental Biomedicine, Tbilisi, Georgia*

10:30 – 12:00 DEPARTURE FROM CHAKVI



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