

**RF Ministry of Education and Science  
National Research Tomsk State University (TSU)**

# **PROGRAMME**

**the Fifth International Summer School for Students and Young  
Scientists**

**“Natural and human environment of Arctic and  
Alpine areas: relief, soils, permafrost, glaciers, biota  
and life style of native ethnic groups in a rapidly  
changing climate”**

**07–21 July 2018, Tomsk–Aktru (Russia)**

**07–24 July 2018, Tomsk–Aktru - Kajbasovo (Russia)**

### **07 JULY (SATURDAY)**

**05.30 – 10.00** Arrival and accommodation of the first group of the Summer School participants (TSU Campus “Parus”, 3a, Buyanovsiky Lane, Tomsk)

**10.00 – 13.00** Registration (TSU Campus “Parus”, 3a, Buyanovsiky Lane, Tomsk)

**13.00 – 14.00** Lunch at cafe «Minutka» (TSU main building, lenin prospect, 36, Tomsk)

**14:00 – 17:00** Free time

**17:00 – 19:00** Excursion around Tomsk-city by bus accompanied by the guide

**19.00 – 21.00** Dinner at cafe «Minutka» (TSU main building, lenin prospect, 36, Tomsk)

### **08 JULY (SUNDAY)**

**08:00 – 09:00** Breakfast «Minutka» (TSU main building, lenin prospect, 36, Tomsk)

**10:00 – 13:00** Presentation session (TSU Scientific Library, Small Conference-hall, 34a, Lenina Pr. Tomsk)

**10:00 – 10:15** **Rykun Artem – Doctor, Professor, Vice-Rector for International Affairs** welcome speech

**10:15 – 10:45** **Terry V. Callaghan – Royal Swedish Academy of Sciences Distinguished Professor; Professor of Arctic Ecology, University of Sheffield, UK; Honorary Doctor of Tomsk State University, RF, Lund University, SE and Oulu University, FI; Head of the SCANNET/INTERACT Network.** “Arctic climate”

**10:45 – 11:10** **Kirpotin Sergey – Doctor, Professor, Director, Bio-Clim-Land Centre of Excellence, Tomsk State University (TSU).** “The mega-transect approach as a research axis for development Siberian Environmental Change Network: World-Class Level in Response to Global Challenges”

**11:10 – 11:40** Coffee break

**11:40 – 12:10** **Nel Werner – Ph.D., Associate Professor, University of Fort Hare. Department of Geography and Environmental Sciences** “South Africa’s research on landscape and climate interactions in mountain and polar environments: Past, present and future”

**12:10 – 12:40** **Kawahigashi Masayuki – Ph.D., Associate Professor, Head of Hydrology Department, Geology and Geography Faculty, Tokyo Metropolitan University** “Introduction of TMU”

**12:40 – 13:00** **Roberto Cazzolla Gatti – Ph.D., Associate Professor, Biological Institute, Biological Diversity and Ecology Laboratory, Researcher at Bio-Clim-Land Centre of Excellence, Tomsk State University (TSU)** “The snow leopard’s kingdom”

**13:00-13:20** **Alexey Rudoy – Professor, Bio-Clim-Land Centre of Excellence, Tomsk State University (TSU),** Earth analogues of the channels on Mars (TSU)

**13:20-13:40** **Andrey Babenko – Professor, Biological Institute, Tomsk State University (TSU),** Soil Invertebrates as Indicator of Terrestrial Ecosystems (TSU)

**14.00 – 15.00** Lunch at cafe «Minutka» (TSU main building, lenin prospect, 36, Tomsk)

**16.00 – 17.00** Excursion to TSU (Botanical Garden, Museum of Mineralogy, Museum of Paleontology, Herbarium, Zoo museum)

**17.00 – 18.00** Free time

**18.00 – 19.00** Dinner at cafe «Minutka» (TSU main building, lenin prospect, 36, Tomsk)

### **09 JULY (MONDAY)**

**05.00 – all day.** Departure from Tomsk to Manzherok (730 km from Tomsk). Stay, excursion and overnight stop on the «Manzherok» Hostel on the bank of Katun-river. Meeting with the second group of participants

**19.00 – 20.00** – Dinner

### ***10 JULY (TUESDAY)***

**08:00 – 09:00** - Breakfast

**09:00 – 20:00** - Departure from «Manzherok» Hostel to «Kochevnik» Hostel (near Chibit settlement, 312 km from Manzherok ) with excursions along the way: Chuysky tract – one of the most beautiful roads on the planet (“National Geographic”), **Lecture-excursion along the way “Late-Quaternary diluvial Floodstreams in the Mountains of Altai” (Prof. Sergey Kirpotin and Prof. Valery Zemtsov)**

**17:00 – 18:00** - Arrival and accommodation on the «Kochevnik» Hostel

**18:00 – 19:00** – Dinner

**19:00 – 20:00** – Banya time (Russian sauna)

### ***11 JULY (WEDNESDAY)***

#### ***ALL EVENTS ON THE STATION DEPENDS ON WEATHER CONDITIONS***

**08:00 – 09:00** Breakfast

**09:00 – 10:00** Departure from “Kochevnik” Hostel Arrival to Kurai Township

**10:00 – 12:00** Transshipment on the special cross-country vehicles. Rising to Aktru Research Station

**12:00 – 14:00** Settling and familiarisation with the Station

**14:00 – 15:00** Lunch

**15:00 – 18:00** Lectures (with background scientific information) of the TSU researchers who will coordinate the field activities

Lecture “Vegetation response to the climate warming in the Arctic” (Prof. Terry V. Callaghan, Tomsk State University (TSU))

Lecture “Landscape zones and provinces of Siberia” (Prof. Sergey Kirpotin and Valery Zemtsov, TSU)

**18:00 – 19:00** Dinner

**19:00 – 20:00** Banya time. Female (Russian sauna)

**21:00 – 22:00** Banya time. Male (Russian sauna)

### ***12 JULY (THURSDAY)***

#### ***ALL EVENTS ON THE STATION DEPENDS ON WEATHER CONDITIONS***

**08:00 – 09:00** Breakfast

**09:00 – 13:00** Excursion to Small Aktru glacier and field data collection on the ecological succession on the retreatment of the glacier. Open-air discussion

**13:00 – 14:00** Lunch

**14:00 – 15:00** Lecture “The ecological interface between climate, biodiversity and food security” (Ass. Prof. Mazinyo Sonwabo, University of Fort Hare)

**15:00 – 16:00** Lecture “Functions of dissolved organic matter in boreal forest ecosystems” (Ass. Prof. Kawahigashi Masayuki, TMU)

**16:00 – 17:00** Lecture “Permafrost and glaciers. Transformations of the permafrost” (Prof. Terry V. Callaghan and Prof. Sergey Kirpotin, TSU)

**18:00 – 19:00** Lecture “Western Siberia: natural conditions, anthropogenic activities and hydrological hazards in the context of climate change” (Prof. Valery Zemtsov, TSU)

**18:00 – 19:00** Dinner

**19:00 – 20:00** Lecture “Alpine ecology and biodiversity” (Associate Professor, Roberto Cazzolla Gatti – Ph.D., Biological Institute, Researcher at Bio-Clim-Land Centre of Excellence, TSU)

**19:00 – 20:00** Banya time. Female (Russian sauna)

**21:00 – 22:00** Banya time. Male (Russian sauna)

### ***13 JULY (FRIDAY)***

#### ***ALL EVENTS ON THE STATION DEPENDS ON WEATHER CONDITIONS***

**08:00 – 09:00** Breakfast

**09:00 – 17:00** Morning: Excursion to Big Aktru glacier and field data collection on the ecological succession on the retreatment of the glacier.

Lunch time: lunch near the glacier and open-air discussion

Afternoon: Second part of field data collection on the glacier and way back to the Aktru station

**18:00 – 19:00** Dinner

**19:00 – 20:00** Lecture “Current State of the Altai Glaciers (Russia) and Trends Over the Period of Instrumental Observations since 1952” (Prof. Valery Zemtsov, TSU)

**20:00 – all evening** Banya time and free time

### ***14 JULY (SATURDAY)***

#### ***ALL EVENTS ON THE STATION DEPENDS ON WEATHER CONDITIONS***

**07:00 – 08:00** Breakfast

**08:30 – 17:00** Long field excursion to the Goluboye (Blue) Lake (Prof. Valery Zemtsov, TSU)

Lunch in the field.

**18:00 – 19:00** Dinner

**19:00 – 20:00** Banya time. Female (Russian sauna)

**21:00 – 22:00** Banya time. Male (Russian sauna)

### ***15 JULY (SUNDAY)***

#### ***ALL EVENTS ON THE STATION DEPENDS ON WEATHER CONDITIONS***

**08:00 – 09:00** Breakfast

**09:00 – 13:00** Morning: Excursion to Taiga forest near the station. Open-air discussion (Associate Professors: Irina Volkova and Igor Volkov)

**13:00 – 14:00** Lunch

**14:00 – 14:30** Presentation “Acquisition and Processing of Stereo Airborn Data of The High Mountains By Drones” (Ass. Prof., Erofeev Alexandr, TSU)

**15:00-16:00** Circulation currents in the Kuray intermountain depression during cathastrophic release of the Kuray palaeo-lake (Prof. Valery Zemtsov, TSU with prof. Rudoy)

**16:00-17:00** Lecture “Landscape and climate interaction in the sub-Antarctic: Current knowledge, future impacts” (Ass. Prof. Nel Werner, University of Fort Hare)

**17:00-18:00** Lecture “Living at the borders: adaptation of plants to extreme environments” (Ass. Prof. Igor Volkov, TSU)

**18:00 – 19:00** Dinner

**19:00 – 20:00** Banya time. Female (Russian sauna)

**21:00 – 22:00** Banya time. Male (Russian sauna)

### ***16 JULY (MONDAY)***

#### ***ALL EVENTS ON THE STATION DEPENDS ON WEATHER CONDITIONS***

**08:00 – 09:00** Breakfast

**09:00 – 16:00** Morning: Excursion to the third Aktru glacier and field data collection on the ecological succession on the retreatment of the glacier

Lunch time: lunch near the glacier and open-air discussion

Afternoon: Second part of field data collection on the glacier and way back to the Aktru station

**17:00 – 18:00** Free time

**17:00 – 18:00** Lecture “WEB-GIS of the Aktru Mountain Glacial Basin: Current State and Prospects of the Development” (Ass. Prof. Erofeev Alexand, TSU)

**18:00 – 19:00** Dinner

**19:00 – 20:00** Banya time. Female (Russian sauna)

**21:00 – 22:00** Banya time. Male (Russian sauna)

### ***17 JULY (TUESDAY)***

***ALL EVENTS ON THE STATION DEPENDS ON WEATHER CONDITIONS***

**08:00 – 09:00** Breakfast

**09:00 – 17:00** Morning: Excursion “Cushion plants as biodiversity engineers (sampling and analysis of selected areas in Altai and Kurai regions)” (Ass. Prof. Roberto Cazzolla Gatti with Ass. Prof. Igor Volkov, TSU)

Lunch time: lunch in the field and open-air discussion

Afternoon: Second part of field data collection on sampling and analysis of selected areas

**18:00 – 19:00** Dinner

**19:00 – 20:00** Lecture “Morphotectonics, history of development and deposits of Devonian depression (south-east of the Altai Mountains)” (Ass. Prof. Oleg Grinev, TSU)

**20:00 – all evening** Banya time

### ***18 JULY (WEDNESDAY)***

***ALL EVENTS ON THE STATION DEPENDS ON WEATHER CONDITIONS***

**08:00 – 09:00** Breakfast

**09:00 – 12:00** Morning: Excursion “Tree diversity in high-mountains (sampling of allometric and diversity data in selected plots around the Aktru station)” (Ass. Prof. Roberto Cazzolla Gatti, TSU)

**13:00 – 14:00** Lunch

**14:00-18:00** Student’s presentations

**18:00 – 19:00** Dinner

**19:00 – 20:00** Banya time. Female (Russian sauna)

**21:00 – 22:00** Banya time. Male (Russian sauna)

**22:00 –** Cultural Programme: Concert and Discotec

### ***19 JULY (THURSDAY)***

**08:00 – 09:00** Breakfast

**09:00 – 18:00** Departure from “Aktru” Research Station to Manzherok Hostel with excursions along the way: Chuysky tract (one of the most beautiful roads on the planet (“National Geographic”), the burial mounds and petroglyphs in Kalbak-Tash (a big natural complex with petroglyphs (of 4 historical stages: from Late Neolithic Age (5000-4000 BC) to Turk era (VI-X centuries AD), Skythian steels near Inya settlement

**18:00 – 19:00** Dinner

### ***20 JULY (THURSDAY)***

**08:00 – 09:00** Breakfast

**09:00 – all day** Departure from Manzherok Hostel to Tomsk. Arrival to Tomsk and accommodation of Summer School participants (*TSU Campus “Parus”, 3a, Buyanovsiky Lane, Tomsk*)

### ***21 JULY (FRIDAY)***

**Departure from Tomsk.**

## **PERSONAL EQUIPMENT**

Sleeping bag for to use during the road overnight stay.

Aktru will provide you with bed linen pillow and blanket.

We have a sauna (Banya) and laundry facility.

If the weather is clear and sunny in Altay, the temperature can rise up to +30°C. But after the sunset you will feel like wearing something warm. It can often rain and snow in the Aktru valley in the middle of July. That's why you should have a rain cape, windproof clothes, a warm jacket, a woolen hat and mittens.

On glaciers and slopes even if it is cloudy, the level of ultraviolet rays is very high. You should take sunglasses and sunscreens with high level of protection (not less than 30) and also a chap stick.

It is necessary to take light strong boots preferably made of leather with a soft sole for excursions. You can use trainers on the territory of the center if the weather is dry. If it is damp, you might want to wear rubber boots. It is very important to have some extra woolen clothes in case you get soaked during the excursion. It will be nice for you to get changed into dry clothes.

If you have problems with health and some chronic diseases, they should not be an obstacle on your way to the country of mountains (except recent heart attacks, strokes, serous toracal surgeries). You should consult your doctor and if they do not object, you can go. Mountainous air, clean water, herbs, walks in the cedar forest have very good effect on health but do not forget to tell the head of the center or a receptionist about your health problems.

Bring some cash if you want to buy beer or food in a cafe.