

## Rector's welcome message to participants

I am glad to welcome you to Kazan Federal University, one of Russia's oldest Universities, and which places equal value on tradition, continuity and innovation.

I appeal to you as my colleagues, because you represent the world's intellectual elite – you have already achieved a lot in your chosen field, and you are the future of science and our civilization.

For this very reason, Kazan Federal University takes great pleasure in welcoming the participants of the XXVIII International Olympiad in Informatics, and we therefore regard it an honour to be organisers of such a significant event. We hope that some of the participants of the Olympiad will one day join the ranks of University students, and in the future will take up a worthy place among the scholars, researchers and teachers of our University. Today we have put in place all the necessary conditions for creativity and career growth, as evidenced by the success of our university graduates in many different areas of life, and I am sure that you will appreciate it.

Nowadays, information technology is a fundamental condition for the quality development of society, entering all fields of activity, and without a solid grasp, progress is inconceivable. At Kazan Federal University we understand this, so invest extensive material and intellectual resources to train specialists who meet in full the requirements of the time, and who will be among the leaders in developing global trends in research. The university has already achieved international recognition in these areas, and we continue to move forwards. The influx of "young blood", fresh ideas and new beginnings no doubt will give this movement a powerful impetus.

I hope you give a good account of yourselves in the competition, demonstrate your knowledge and represent your country to the best of your abilities. Good luck, my friends!

**Ilishat Gafurov**, Rector of Kazan (Volga Region) Federal University (KFU) (Deputy Co-chairman of the Organisational Committee IOI 2016)



## About Kazan Federal University

**One of the organisers of the 2016 International Olympiad in Informatics is Kazan Federal University (KFU).**

Kazan University itself is an academic institution with a long history. Founded on 5th November 1804 by order of Emperor Alexander I, it is one of the oldest surviving institutions of higher education in Russia (only Moscow University (now MGU) is older. Many famous faces have graced its walls over the course of the past two centuries; students who would go on to become writers and political activists, and academic staff whose names and legacies are forever engraved in the annals of science.

According to governmental decree in 2010, our institute became one of eleven federal universities. Since then it has grown significantly and undergone several changes – as an example, all but three of its faculties have since been reclassified as institutes. They number 24 in total, and are grouped into the following areas: Natural Sciences, Humanities and Social Economics, and Physics, Mathematics and Information Technology. KFU also houses two institutes of secondary education: the KFU IT-Lyceum and the N. I. Lobachevski Lyceum.

KFU contains 150 scientific and research laboratories equipped with the latest technologies, as well as a large number of auditoriums, language laboratories and computer laboratories. The area they cover is vast: over 223,000 m<sup>2</sup>. Around 44,000 students (including 3200 foreign students from the CIS

and beyond) study within their walls, as well as 1000 post-graduate students. KFU in turn employs 3000 academic staff, and 7000 people in total.

The university has four main areas of strategic development in education, science and innovation: "Translational 7P Medicine", "EcoOil", "AstroChallenge" and "Teacher XXI".

It stands to reason that research at KFU is not only conducted in priority fields, but in all disciplines taught at the university. This is evidenced by the ever-increasing quantity of articles published in scientific journals – in 2015, for example, academics at the university published 850 articles in journals on the Web of Science database, and no fewer than 1827 articles on the Scopus database.

In short, KFU is going from strength to strength, showcased in particular by its participation in "Project 5-100" – the Programme to Increase the Ability of Leading Russian Universities to Compete on a Global Scale, the goal of which is to facilitate the inclusion of the 5 best Russian institutes of higher education into the top 100 in the world, by 2020. This has corresponded with KFU's continual rise in the rankings throughout the past years. As of 2015 it held the following positions: QS World University Rankings – 551-600; QS University Rankings: BRICS – 72; Times Higher Education World University Rankings – 301-350 and Times Higher Education BRICS & Emerging Economies Rankings – 31.

To find out more about Kazan Federal University, go to <http://kpfu.ru/eng>. Already undoubtedly one of the leading universities in the Russian Federation, it will hopefully earn a place amongst the best universities in the world in the not-too-distant future.



# Russia, Kazan, Kazan Federal University

Contestants from 86 countries from all five continents are now settling in the Universiade Village. They shared with us their first impressions of Russia, Kazan and Kazan Federal University.

**Richard Gong, Australia**

The flight was good, and we're really happy with where we're staying. We really like our attach ! Our team has a pretty unique sense of humour, and we're really glad that Aidar (our attach ) gets our jokes!

- No, because we're a very close team. We trained together because we're all friends and have known each other for ages. We've become a real family. We love to tease each other, but at the same time we always support everyone on our team. Our strength lies in our humour. Well - you've already seen (adds something in Australian and everyone laughs)...The symbol of our team is the koala, so we've taken some koala teddies along with us. It's the symbol of our country.



**Ahmed Elbatanony, Egypt:**

This is our first time at the International Olympiad in Informatics, but we really hope to win. We've always thought Russia was a really cold country - we were so surprised at how hot it is here! We got here yesterday, so we've had a chance to look around the very beautiful Universiade Village where we are staying. Today we started to learn some Russian - we now know how to say "hi", "bye", "thanks", "I speak English", and how to count to ten. Tomorrow we're planning to learn some Tatar! Incidentally, our whole team would love to come and study at Kazan University!

**Gianni Weinand, Argentina**

It's odd, but we immediately felt at home in Kazan! The food here is great! As is the university and the Universiade Village. Today we want to rent bicycles and look around the campus, and then venture out to the centre. It'd be great to win some gold medals, but the chance to experience Kazan and Russia, and of course visit the Kremlin, is also brilliant.



# - contestants' first impressions



**Mikhail Putilin, Russia**

This is my second time at this Olympiad. Last year I won a gold medal, and this year I hope to do the same. Our team's mascot is a hedgehog. A few years ago at the All-Russia Olympiad there was a question called "The hedgehog in the fog", which we all really liked, and so we decided to make a hedgehog our mascot. I hope our team wins gold medals this year, but at the same time I want to wish good luck to all the other contestants!



**Ali Bahjati, Iran**

We know that Russia is a great and powerful country. We know Kazan as the sports capital of Russia, so we were very interested to come here and learn more about Kazan University. We really like Kazan because there is green wherever you look. We also like the local architecture, such as the Kremlin and Bauman Street. We're been training for the Olympiad for nine months, and before that took part in local tournaments – the journey here wasn't easy. What are our strengths? We're all friends – all unique, and I think many contestants here will know one of us – Amir – who is one of the best programmers at Codeforces. This is my second time at the Olympiad and can say that our main competitors are Russia (who are always very strong) and China. But we'll try to beat them!



**Encho Mishinev, Bulgaria**

We haven't actually been off the campus yet, but I'm sure the city is wonderful. The Universiade Village had me at first sight. I did have a lucky charm, but I've since lost it. If anything things have gone better since then – it seems it was bringing my bad luck! And so now I hope to win the Olympiad.





### IOI 2016 volunteers hold flash mob

Over 200 IOI student-volunteers from all over Russia and abroad took part in a flash mob on the "Alley of Flags". Volunteers formed the five Olympic rings in honour of the fact that this will be the first IOI to feature students from all five continents. A further metamorphosis saw them spell out the initials I-O-I, leading to some impressive shots from above. Everybody, volunteers and coordinators alike, cannot wait for tomorrow, as once everyone is comfortably settled in the Village, the IOI 2016 opening ceremony will begin.

### Tradition

# Ochpochmak or chak-chak - take your pick!

Bakery food in Tatarstan will keep you coming back for more! If it's your first time in Kazan, we recommend it be the first thing you try, though of course the other dishes and drinks are also worth a taste.



The names can get a bit confusing, however, so here's a handy little guide to help you know what's what.

**Gubadya** - a many-layered pie with rice, egg, kurt (dried tvorog), raisins, apricot and prunes. This pie is one of the tastiest that Tatar cuisine has to offer, and is made for festivals and other big celebrations.



**Chak-chak** - a delicious comfort food made from dough and honey. The dough is rolled into little balls or sticks, fried, and then mixed with honey.

**Ochpochmak** (Треугольник in Russian) - the national dish of both



Tatarstan and neighbouring Bashkortostan, baked with either yeasted or unleavened dough and filled with potato, meat and onion.

**Azu** - most probably the most famous dish in Tatar cuisine, this stew is made with meat, vegetables, hot tomato sauce and salted cucumber.



**Talkysh-kalyave** - Tatarstan's national dessert, made from thin strings of honey formed into a pyramid. One of the region's tastiest sweet things.



**Katyk** - a drink made from sour milk with a tasty equally reminiscent of yoghurt and kefir (another sour milk product).



**Airan** - a sour milk drink traditionally made from mixing katyk with a low fat content with water.



### Some useful phrases

ENGLISH	RUSSIAN	TATAR	ENGLISH	RUSSIAN	TATAR
HI!	Привет [priviet]	Сәлам [säläem]	BEEF	Говядина [Govyadina]	сыер ите [sijir ite]
BYE-BYE!	Пока [Poka]	Хуш! ['huʃ]	PORK	Свинина [Svinina]	дунгыз ите [dungiz ite]
GOOD MORNING	Доброе утро [Dobroye utro]	Хәерле иртә! [häerle irtä]	CHICKEN	Курица [Kuritsa]	тавык ите [tauk ite]
THANK YOU	Спасибо [Spasibo]	Рәхмәт [rähmæt]	FRUIT	Фрукты [Frukty]	жиләк-жимеш [zilæk-zimesh]
YOU ARE WELCOME	Пожалуйста [Pozhaluysta]	Рәхим итеп [Rähim itep]	VEGETABLES	Овощи [Ovoshchi]	яшелчә [jäʃeltʃæ]
BREAD	Хлеб [Khleb]	Ипи [ipi]	CHEESE	Сыр [Syr]	Сыр [sir]
WATER	Вода [Voda]	Су [su]	OATMEAL	Овсяная каша [Ovsyanaya kasha]	Солы боткасы [soli botkasi]
MILK	Молоко [Moloko]	Сөт [set]			

### Kazan University: from the archives



The great mathematician and inventor of non-Euclidean geometry **Nikolai Lobachevski** (1792-1856) spent his whole life connected to Kazan University.

A brilliant student (Lobachevski earned his Master's degree at just 19 years old), he remained at the university on completing his studies and became a professor at the age of 24. He taught here for a total of 40 years (as many as 9 different subjects), spending 8 years as deacon of the Physics and Mathematics Faculty, and 19 as rector. He did much to develop the university library, working hard to add to the collection and imposing strict rules on the book care and storage. Lobachevski's work is still going strong: Kazan Federal University's library (named in his honour) is one of the 10 biggest libraries in Russia, and the 3rd biggest for a university.

### WEATHER FORECAST

13 August, Saturday

Day ☀️ +30 C / 86 F Night 🌙 +19 C / 66.2 F