Present statistics of the Centre
Main Campus
Area 75 hectare
VISION: to enter the Top 200 leading research universities in the world
MISSION: Generating the human capacity - highly qualified specialists competitive in the international labor market

«Today the world is entering the era of the Fourth Industrial Revolution, an era of profound and rapid changes: technological, economic and social...»

«The most important issue is the development of our own ecosystem of developers of digital and other innovative solutions»

From the Address of the President of Kazakhstan N. Nazarbayev

ABOUT THE UNIVERSITY:
- Faculties: 16
- Chairs: 64
- Research institutes: 24
- Laboratories of the National Level: 2
- Science and Technology Park

ACADEMIC PROFILE:
- 19 120 students
- Bachelor specialties: 82
- Master specialties: 95
- PhD programs: 76
Al-Farabi Kazakh National University - the only university in the Republic of Kazakhstan, which has a unique scientific and innovative structure.

- 16 Faculties
- 10 Scientific Institutes «Gylym Ordasy»
- 8 Scientific Institutes and Laboratory of engineering profile of natural area
- 5 Scientific Institutes, 18 Scientific Centers and 1 Laboratory of socio-humanity area

Research is carried out in accordance with the priorities of the Republic of Kazakhstan and world trends in science and technology.
<table>
<thead>
<tr>
<th>Faculties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanics and Mathematics</td>
</tr>
<tr>
<td>Physics and Technology</td>
</tr>
<tr>
<td>Chemistry and Chemical Technology</td>
</tr>
<tr>
<td>Biology and Biotechnology</td>
</tr>
<tr>
<td>Geography and Nature Management</td>
</tr>
<tr>
<td>History, Archeology and Ethnology</td>
</tr>
<tr>
<td>Philology, Literary Studies and World Languages</td>
</tr>
<tr>
<td>Journalism</td>
</tr>
<tr>
<td>Philosophy and Political Science</td>
</tr>
<tr>
<td>High School of Economics and Business</td>
</tr>
<tr>
<td>Law</td>
</tr>
<tr>
<td>International Relations</td>
</tr>
<tr>
<td>Oriental Studies</td>
</tr>
<tr>
<td>Pre-College Education</td>
</tr>
<tr>
<td>High School of Public Health (established in 2016)</td>
</tr>
<tr>
<td>Information Technologies (established in 2017)</td>
</tr>
</tbody>
</table>
Research Institutes and Centers
(Natural and Technical Sciences)

Institute of Mathematics and Mechanics

Institute of Experimental and Theoretical Physics

Institute of New Chemical Technologies and Materials

Center of Physico-Chemical Methods of Research and Analysis

Institute of Biology and Biotechnology Problems

Institute of Ecological Problems

National Nanotechnology Open Laboratory

Scientific and Technology Park

Laboratory of Engineering Profile
## Socio-humanity institutes and centers

<table>
<thead>
<tr>
<th>Research Centre for Korean Studies</th>
<th>Republican Research and Educational Center “Al-Farabi and spiritual culture of the Kazakh people”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research and Education Center for Study of Japan and Central Asia (Almaty Office of Tsukuba and al-Farabi KazNU)</td>
<td>T.T. Tazhibayev Center for Ethnopedagogics and Ethnic Psychology</td>
</tr>
<tr>
<td>TURKSOY scientific-educational and cultural center</td>
<td>Research Center for Gender Education</td>
</tr>
<tr>
<td>Research and Innovation Center for Economical Studies</td>
<td>Center for Sociological Research and Social Engineering</td>
</tr>
<tr>
<td>Abay Scientific Research Institute at al-Farabi KazNU</td>
<td>Research and Innovation Center for Educational Studies</td>
</tr>
<tr>
<td>Scientific Research Center “Computer Linguistics”</td>
<td>Institute of State and Law</td>
</tr>
<tr>
<td>O. Suleimenov Scientific and Research linguistic center</td>
<td>International Institute of Kipchak Studies</td>
</tr>
<tr>
<td>Institute for Security and Cooperation Problems</td>
<td>Research and Educational Center for Remote Sensing of the Earth</td>
</tr>
<tr>
<td>Resource Center for American and Democratic Studies</td>
<td>Scientific Research Laboratory for Health and Environment</td>
</tr>
<tr>
<td>Research and Educational Center for German Studies</td>
<td>Research and Education Center &quot;Digital technologies and robotics&quot;</td>
</tr>
<tr>
<td>United Nations Regional Center</td>
<td>Scientific Research Institute of Archeology and Steppe Civilizations</td>
</tr>
<tr>
<td>Research and Educational Center for European Law</td>
<td></td>
</tr>
<tr>
<td>Scientific Research Center of Cognitive Neuroscience</td>
<td></td>
</tr>
</tbody>
</table>
Former research institutes of Academy of Sciences (Gylym Ordasy) integrated with Al-Farabi KazNU

Institute of Mathematics and Mathematical Modeling
Institute of Information and Computer Technologies
Institute of Economics
C.Valikhanov Institute of History and Ethnology
M.Auezov Institute of Literature and Art
R.Suleimenov Institute of Oriental Studies
A.Baitursynov Institute of Linguistics
U.Dzholdasbekov Institute of Mechanics and Engineering
Institute of Philosophy, Political Science and Religious Studies
A.Margulan Institute of Archaeology
Research-Innovation Way ("Pipe")

**Researches**
- State authorities of Kazakhstan, Development institutions, National and international funds
- Scientific institutes and centers

**Innovations**
- Business angels
- Venture capital, Development institutions, Enterprises
- Technopark, Center for engineering and commercialization, research teams Design Center, factories, SMEs

**Production**
- National companies, Business, Second level banks
- Enterprises production sphere, stock exchanges, SMEs

**Design**
- Design, Patenting
- Engineering
- Technical designing

**Distribution**
- Production

**Idea**
- Fundamental
- Applied

- Publications with IF - 1835
- h-index - 710
- Protective documents - 836
- Prototypes - 61

- Production prototypes - 25
- Creation of start-up and spin-off companies - 89
- License agreements – 1
- Technology transfer - 15

- Production output - 13
- Small scale, serial production - 5
Contingent Staff Summary

Employees

- Faculty: 51%
- Administrative staff: 14%
- Technicians: 7%
- Others: 28%

FACULTY

Total number 2,010

1559

- PhD, doctor of sciences, candidate of sciences
- Postgraduates, graduates 451
Financial and economic performance indicators

The proportion of university income for 2016

- Commercialization of R&D: 0.04%
- Sponsorship: 0.75%
- Research programs: 26.80%
- Educational services: 72.40%

Material and technical base

- Acquisition of fixed assets: 4.6 mln USD
- Computer equipment: 1.3 mln USD
- Educational and laboratory equipment: 1.5 mln USD
- Library stock and electronic educational resources: 0.4 mln USD
- Other expenses: 1.4 mln USD
Capacity building activities

- Budget of research activity
- Capacity building activities

0.48 bn tenge/1.5 mln $

In Kazakhstan 26%

Abroad 74%
The opening of the center of Green Technologies
June 6, 2017
Opening of the Plant Factory laboratory for microclonal reproduction in the framework of Al-Farabi KazNU and the University of Dunkook

Joint implementation of research and technology transfer on:
• industrial cultivation of commercial varieties of fruits, berries and flower-decorative crops to meet consumer demand;
• obtaining and mass replication of elite virus-free planting stock for nurseries and seed farm.
The supercomputer received at the initiative of President as a government grant of the People's Republic of China will act as the computing core of the IT-technopark.

**Rmax=1 200 Tflops**

**Cost:** $10 million - a grant from the PRC.  
$5 million - additional funds

**The core of the IT-technopark is a supercomputer, included in the top 500 on the computing power**

**Cultivation of the new industry using digital technologies**

**IT Hub for the city (storage, processing, transmission of large amounts of data)**

**IT infrastructure for education, health, social institutions, start-up and spin-off companies**

IT-technopark of “Alliance of Universities of the New Silk Road” - the point of development of the IT industry of the country on the basis of interaction of participants of the International Alliance of Universities of the New Silk Road, leading high-tech world companies, business incubators and start-up companies.
ZONE OF HIGH TECHNOLOGIES BY “SILICON VALLEY” MODEL

TOTAL AREA OF THE BUILDING 14 038 sq.m.

- DATA PROCESSING CENTER, SUPERCOMPUTER (1 200 Tflops)
- CENTERS FOR COLLECTIVE USE «INDUSTRY 4.0» 3 600 sq.m.
- OFFICES AND LABORATORIES 3 400 sq.m.
- EXHIBITION COMPLEX 2 700 sq.m.
- COWORKING 1 000 sq.m.
- OBJECTS OF SOCIAL IMPORTANCE 300 sq.m.

130 universities of the world included in the Alliance of Universities of the New Silk Road and the Russian Innovation Center “Skolkovo” supported the implementation of the project on creation of IT technology park.
Al-Farabi KazNU-Farabi and the Institute of Remote Sensing and Digital Earth of the Academy of Sciences of the PRC signed an agreement on the establishment of the China-Kazakhstan Joint Research Center for Remote Sensing and its application for sustainable development of the environment in Central Asia and Kazakhstan.

The Center for Remote Sensing was opened at A-Farabi KazNU together with the Institute of Remote Sensing and Digital Earth of the China Academy of Sciences.

- Study of environment and natural disasters based on remote sensing data received by RADI, CAS;
- Carrying out geological studies, mapping, aerial and satellite surveys, spectrometry, obtaining hyperspectral images, etc.;
- Dissemination of research within the framework SCO scientific base and other international relations, implementation of joint innovation projects;
- Solution of scientific, applied, technological, analytical and educational tasks for the creation of digital Kazakhstan.

KazNU virtual ground station will receive remote sensing data from the following satellites: Chinese HJ-1A, HJ-1B, GF and USA Landsat8.
Within the framework of the “UNIFORM” joint international project of Al-Farabi KazNU with the University of Tokyo

2010  Beginning of training bachelors in Space Technologies
2012  Signing of the Agreement with the University of Tokyo on internship of Al-Farabi KazNU students on the UNIFORM program
2013  Beginning of internship of graduate students of Al-Farabi KazNU at the University of Tokyo.
2013  Admission of the first two doctoral students in Space Technologies
2014  Graduation of the first bachelors and masters in Space Technologies

- Nano-satellites Al-Farabi-1 and Al-Farabi-2 designed and assembled
- Software for telecommunications module of CMX series of CML was developed with GMSK modulation for necessary tasks of the nanosatellite
- Tripartite memorandum between Al-Farabi KazNU, Kosmotras and Sputniks and Contract for launch services of Sputniks were signed
- On February 15, 2017, the first Kazakh nanosatellite "Al-Farabi-1" was launched from the Indian cosmodrome on the Polar Satellite Launch Vehicle (PSLV)
- The launch of the nanosatellite Al-Farabi-2 is scheduled for May 2018
On-going programmes
In 2017 the scientists of the University implemented 574 projects with total funding of 4.67 bn tenge (14.5 mln. USD), including:

- **6 projects** of program-targeted funding of Ministry of Education and Science of the Republic of Kazakhstan on DRIA of Al-Farabi KazNU;
- **128 research works** within the framework of business agreements with organizations and enterprises;
- **193 grants** of international funds and organizations.
Research activity

The amount of research activity funding (bn tenge)

- 2014: 4.3
- 2015: 4.4
- 2016: 4.6
- 2017: 4.7

Publications in high-ranked journals of Clarivate analytics in 2017
- Kazakhstan: 1684
- KazNU: 369
- Satellite institutes: 104

Publications in high-ranked journals of Scopus in 2017
- Kazakhstan: 2554
- KazNU: 512
- Satellite institutes: 118
Publications in high-ranking journals

**Science**

**Journals**

AGRICULTURAL IOT SOLUTION FOR ACADEMIC PEOPLE.

**nearly**

SHARE

**REPORT**

Ancient genomes revisit the ancestry of domestic and Przewalski’s horses

**nature**

**International Journal of science**

Letter

Blazar spectral variability as explained by a twisted inhomogeneous jet

**SJR=13.535**

**SJR=18.032**
Clarivate Analytics Awards

«Top Organization Springer Nature»
Nomination «The Most Published Organization»

«Leader of Science -2017»
In nomination
«Author is highly cited Kazakhstan publication prepared without participation of foreign co-authors»
IV International Farabi readings
April 4-21, 2017

INTERNATIONAL AL-FARABI FORUM «AL-FARABI AND MODERNITY»

7 international conferences, 3 round tables, International Student Forum «Green Bridge across generations» and International scientific conference of students and young scientists «Farabi alemi» were held on the IV International Farabi readings dedicated to the International exhibition EXPO-2017 in ASTANA.
The research activity of students

Publication activity of students for 3 years

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>in foreign journals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>4110</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>4217</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>4242</td>
<td></td>
</tr>
</tbody>
</table>

Participation of students and young scientists in work of international scientific conferences for 2015-2017

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>303</td>
</tr>
<tr>
<td>2016</td>
<td>329</td>
</tr>
<tr>
<td>2017</td>
<td>345</td>
</tr>
</tbody>
</table>
Patent-licensing activity

- Applications
- Decisions
- Patents and copyright certificates
Foreign patents

USA Patent №9834826 «Method for extracting beryllium from bertrandite and phenakite mineral groups» // Ospanov H.K., Mutanov G.M., Ospanova N.H., Baiboldieva A.B.

USA Patent №9650751 «Method and device for deepening riverbeds and their cleaning from sediments» // Salnikov V.G., Khalidullin O.Kh., Duskaev K.K.

Device for separation of hydrocarbon gas mixture into components with specified properties by convective diffusion

Project manager: Kosov V.N.

Plazmotron for increasing energy efficiency of thermal power plants and boilers

Project manager: Messerle V.E.

**Autonomous solar plant for producing thermal and electric energy**
Project manager: Lavrishchev O.A.

**Development of a silicon solar battery with a planar concentrator**
Project manager: Svanbayev E.
Spin-off companies under the World Bank ("Stimulation of productive innovations")

Innovation biopreparation "Miko-Oil" for soil and water purification from oil pollution and agro-microbiological technology of its application
«BioClean», Ltd.
Project manager: Mukasheva T.D.

Technology of seasonal accumulation of solar thermal energy for heating and hot water supply in internal areas
«GreenWell Mechanics», Ltd.
Project manager: Tungatarova M.

Machine vision based on an adaptable self-organizing neural network
«KITC», Ltd.
Project manager: Kozhagulov E.T.

Production of lanolin by separation of wool grease from wool wash water
«Innovation enterprise «Sterin», Ltd.
Project manager: Konuspaev S.R.
The World Bank Grant program for development of technology transfer/commercialization offices in Universities of RK

<table>
<thead>
<tr>
<th>№</th>
<th>Наименование высшего учебного заведения</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Al-Farabi Kazakh National University</td>
</tr>
<tr>
<td>2</td>
<td>Евразийский национальный университет имени Л. Гумилева</td>
</tr>
<tr>
<td>3</td>
<td>Казахский национальный исследовательский технический университет имени К. Сатпаева</td>
</tr>
<tr>
<td>4</td>
<td>Казахский национальный аграрный университет</td>
</tr>
<tr>
<td>5</td>
<td>Карагандинский государственный технический университет</td>
</tr>
<tr>
<td>6</td>
<td>Южно-Казахстанский государственный университет имени М. Ауэзова</td>
</tr>
<tr>
<td>7</td>
<td>Казахский агротехнический университет имени С. Сейфуллина</td>
</tr>
<tr>
<td>8</td>
<td>Западно-Казахстанский государственный университет имени М. Утемисова</td>
</tr>
<tr>
<td>9</td>
<td>Восточно-Казахстанский государственный университет имени Д. Серикбаева</td>
</tr>
<tr>
<td>10</td>
<td>Северо-Казахстанский государственный технический университет имени М. Козыбаева</td>
</tr>
</tbody>
</table>

$360,000
The World Bank Project
“Stimulation of productive innovations”

“Consortia of the manufacturing sector”
“Industrial and research cooperation center”
Project manager: An E.A.

Creation of the Industrial and research cooperation center
Projects of Science Fund

Complex automation of universities, research institutes and implementation of digital services

Project manager: Mutanov G.M.

Creation of small production of hardware and software complexes for studying electromagnetic phenomena at the physics course for secondary schools

Project manager: Ramazanov T.S.
Projects of Science Fund

Organization of production of carbon nanostructured materials for a wide range of applications

Project manager: Gabdullin M.T.

Creation of the pilot production of polyester resins for special purposes

Project manager: Irmukhametova G.S.

Organization of small-scale production of energy-saving gas-discharge lamps with increased intensity of luminescence on the basis of new technology

Project manager: Dosbolayev M.K.
Innovation projects of Student business incubators

2013: 46
2014: 67
2015: 75
2016: 84
2017: 87
The best projects of Student business incubators in 2017

- Method of resonance wave electron energy transfer
- Wi-Fi Presentations
- The technology of electrochemical purification of the indium using bismuth as a depressant additive
- «Linguorubik»
- Autonomous watering of plants
- «Turan Uilari»
- Unemdi jaryk kozi
- Mobile Forensic Technologies
Student Start-up companies

- Snail Achatina fulica as a domestic pet providing mucin
- «Media-house»
- «Coolkeepers»
- «Consulting Far East»
- «On time»
- «Context Galamat»
- «Bastau Innovation»
- «Taza Life»
International collaborations
Membership in international organizations

QS World University Rankings (2017) 236
QS Emerging Europe and Central Asia Ranking (2017) 10
International recognition of KazNU

Global Hub for Sustainable Development of the Program “Academic Impact” of the United Nations

Regional Hub for Sustainable Development within the framework of the UNESCO Program – UNITWIN

**KazNU is the only university in Central Asia joined to:**

- **World University Consortium (WUC) (2014)**
- **Network of universities of Clinton Global Initiative – Clinton Global Initiative University (CGI U) (2015)**
- **COMSATS organization, uniting 24 universities of the world (2014)**
- **Alliance of universities of Silk Road countries (Silk-road Universities Network) and its Board of Directors (2015)**
- **World Academy of Art and Science (WAAS)**
  Rector G. Mutanov is elected a member of WAAS

In the framework of the VII Astana Economic Forum on May 21-22, 2014, **III Asian Universities Forum** was held on the basis of the Al-Farabi Kazakh National University.
International funds and organizations financing university projects

- **Erasmus+** 14%
- **Japan Foundation** 7%
- **Mevlana** 5%
- **Keele University** 5%
- **HKPU** 5%
- **EWG Hannover** 2%
- **UNISE** 4%
- **The Academy of Korean Studies** 4%
- **Würzburg University** 4%
- **The World Bank** 7%
- **TEMPUS** 5%
- **Ministry of Science and Technology (China)** 7%
- **DAAD** 7%
- **Newton-Al-Farabi** 7%
- **FES Friedrich Ebert Foundation** 5%
- **SNSF** 5%
- **US Department of Foreign Affairs** 5%
- **Erasmus+** 5%
Partner organizations by countries

- CIS: 38%
- South Korea: 15%
- China: 7%
- Turkey: 7%
- Japan: 5%
- USA: 4%
- Germany: 4%
- Great Britain: 4%
- Poland: 3%
- Spain: 3%
- France: 3%
- Hungary: 3%
- India: 2%
- Italy: 2%
- Germany: 4%
- Great Britain: 4%
- Poland: 3%
- Spain: 3%
- France: 3%
- Hungary: 3%
- India: 2%
- Italy: 2%
- China: 7%
- Turkey: 7%
- Japan: 5%
- USA: 4%
- South Korea: 15%
- CIS: 38%
Participation in COMSATS’ programmes
10th ISESCO-COMSATS-KazNU National Workshop under ISESCO-COMSATS biennium Cooperation Programme in Almaty, Kazakhstan (October 02-06, 2017)


The aim of the series of workshops is to build indigenous capacity of the local scientists and institutions in the developing countries and promoting self-reliance for upkeep of scientific equipment being used in research Labs. More than 60 participants including senior scientists, engineers and technicians from various research institutions and universities of Almaty, and other cities of Kazakhstan, benefited from the training provided by the COMSATS’ international experts.
Joint projects of Al-Farabi KazNU and COMSATS
Joint projects of Al-Farabi KazNU and COMSATS

7th International Workshop “Internet Security: Enhancing Information Exchange Safeguards”

Workshop date: December 19-23, 2017

The event was jointly organized by Commission on Science and Technology for Sustainable Development in the South (COMSATS); Islamic Educational, Scientific and Cultural Organization (ISESCO); and the Inter Islamic Network on Information Technology (INIT), and was hosted by the Al-Farabi Kazakh National University (KazNU), Kazakhstan.

The technical sessions of the five-day workshop were attended by 40 young researchers, academicians, system administrators and cyber security professionals.

The event provided a forum to the participating researchers and professionals to learn about the latest advancements in the field of Internet security; use the state-of-the-art technologies for protection of network and network accessible resources from different types of software attacks; and working out effective Internet/information security solutions for general public, governmental organizations, and commercial enterprises through rigorous risk analysis and security management approaches.
Joint projects of Al-Farabi KazNU and Excellence Centers of COMSATS

International Center for Chemical and Biological Sciences (ICCBS), Karachi University, Pakistan

“Developing the Capacities of Al-Farabi Kazakh National University, Kazakhstan in Phytochemical Development”

The leaders of the joint research center:

- Professor Muhammad Iqbal Chaudhary is Director of the International Center for Chemical and Biological Sciences of the University of Karachi.

- Professor Zharylkasyn Abilov (Department of Chemical Technology of Organic Substances, Natural Compounds and Polymers of Al-Farabi KazNU).
Future plans
Goals of Al-Farabi KazNU until 2019

- Enter the top 200 leading research universities in the world
- Transformation of the classical national university into the world-class research university
- To increase quantity of publications in rating journals with impact-factor to 2000
- To increase volume of revenues from commercialization of scientific developments to 1.8 bn tenges/10 mln $
- To achieve 98% employment of graduates
- To increase share of accredited educational programs to 100%
- Commercialization of 8 R&D results and obtaining 5 patents of the USA, the countries of Europe and the Asian-Pacific region
- Creation of 15 innovation “Start-up companies”, and 8 small innovative enterprises with the participation of the University
Submission of 4 journals applications for inclusion in the international Scopus database and other databases in 2018
Proposals for participation in COMSATS’ programmes
We would like to enter into a partnership with

- International Center for Climate and Environment Sciences
- Institute of Atmospheric Physics, Chinese Academy of Sciences
- TÜBITAK Marmara Research Centre (MAM)
- Embrapa Agrobiologia
- International Centre for Environmental and Nuclear Sciences (ICENS)
- National Research Centre (NRC) Egypt

and also we are glad to welcome other organizations
Al-Farabi KazNU in TOP-250
(QS World University Rankings)
Thank you for attention!
**CENTERS FOR COLLECTIVE USE «Industry 4.0»**

**CONTRACT RESEARCH AND DEVELOPMENT**
- Creation of prototypes, patenting, certification of products, technical design

**PRODUCTION**
- Small series, CNC machines, assembly and welding sites, electronics and soldering development site

**PROTOTYPING**
- Industrial design, 3D prototyping, functional coatings, computer engineering, development of electronic circuits, precise machining

**ENGINEERING DEVELOPMENT**
- Creation of prototypes, patenting, certification of products, technical design

**Collaboration: the Hong Kong Polytechnic University, «DMG Mori»**

- Development of technological solutions and original technologies
- Issue of laboratory samples and small-size production on the order of industrial enterprises
- Creation of prototypes of high-tech products with access to the market
- Certification of product samples

*German-Japanese enterprise: creation of pilot samples for Industry 4.0*
Exhibition Complex

TOTAL AREA 2 700 sq.m.

CONSTANTLY OPERATING SITE FOR EXHIBITIONS WITH THE PURPOSE TO ATTRACTION INTERNATIONAL PARTNERS AND INVESTORS

- Demonstration of achievements in the field of science and education
- LCD panels in the exhibition area for placement of video content
- Coworking Center
- Meeting rooms
- Organization of mentoring programs
- Rest zone
- Wi-Fi zone with a speed of up to 100 Mbps

The Best Cost  500 parking spaces  Atmosphere of technological entrepreneurship in the city center