

*Report of NEFU Rector Evgenia Mikhailova
to the Supervisory Board of the M.K. Ammosov North-Eastern Federal University
Federal State Autonomous Educational Institution of Higher Vocational Learning
January 15, 2015*

**FIRST FIVE YEARS OF NEFU DEVELOPMENT
2010-2014**



M.K. Ammosov North-Eastern Federal University (NEFU) was established by Decree of the President of the Russian Federation No. 1172 of October 21, 2009 “On Establishing Federal Universities in North-Western, Volga, Ural, and Far Eastern Federal Districts”, Directive of the Government of the Russian Federation No. 499-p of April 26, 2010, Order of the Ministry of Education and Science of the Russian Federation No. 435 of April 26, 2010 “On Federal State Autonomous Educational Institution of Higher Vocational Learning “M.K. Ammosov North-Eastern Federal University”. NEFU comprised M.K. Ammosov Yakutsk State University, Yakutsk State Engineering and Technology Institute, Sakha State Pedagogics Academy, as well as federal state research institutions: Scientific Research Institute of Regional

Economics of the North, Scientific Research Institute of Applied Ecology of the North, Scientific Research Institute of Mathematics, Scientific Research Institute of Health.

ESTABLISHING THE FEDERAL UNIVERSITY

- Decree of the President of the Russian Federation No 1172 of October 21, 2009 "On Establishing Federal Universities in North-Western, Volga, Ural, and Far Eastern Federal Districts"
- Directive of the Government of the Russian Federation No 499-p of April 26, 2010
- NEFU Development Programme for 2010-2019 (Directive of the Government of the Russian Federation No 1694 of October 7, 2010)
- On April 9, 2010 by Directive of the Government of the Russian Federation No 512-p Evgenia Mikhailova was appointed as the NEFU Rector



3

NEFU aims to become a multidisciplinary scientific-educational complex with a well-developed innovative, educational-scientific and sociocultural infrastructure. As a federal university, one of the tasks of NEFU is to actively promote the development in the federal district as a whole. This means that the **University has a goal of strengthening its presence, and hence its influence, in the development of all regions or a number of subjects of the Far Eastern Federal District.** The main instrument for reaching this goal is the Development Programme of the University, approved on October 7, 2010 by the Prime Minister of Russia.

NEFU has its own mission and strategic goal, for which it has identified the key tasks of its development.

I. NEFU: DEVELOPMENT PRIORITIES

THE MISSION OF THE UNIVERSITY IS

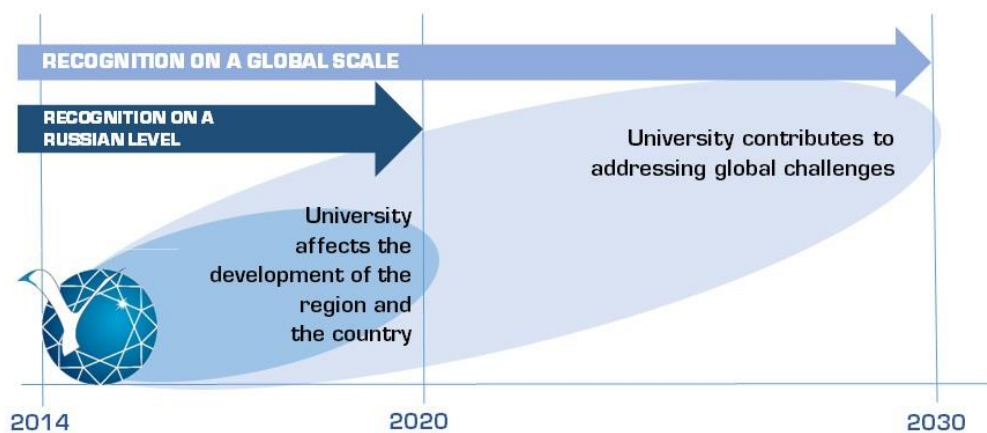
training competitive specialists, **attracting and retaining** young people, including youth from other regions, for ensuring sustainable social and economic development of the region, conducting research, and implementing innovative breakthroughs and services that ensure **the high quality of life** and **preserve and develop the culture** of the people in the North-East of Russia and the Arctic.



4

STRATEGIC GOAL OF THE UNIVERSITY

is its recognition by 2020 on Russian and international levels as a modern scientific-educational and cultural centre of North-Eastern Russia with a well-developed innovative, scientific-educational and sociocultural infrastructure that trains highly qualified specialists who can develop high-end technologies and modernize the economy and social sphere of the region.



TASKS OF UNIVERSITY DEVELOPMENT

Modernizing educational activities =>
new quality of education => «gates to Eurasia»

Developing scientific research environment, conducting fundamental and applied research that allows the creation of conditions for scientific-technical, technological, and social-economic development of the macroregion

Creating conditions for generating, accumulating and commercializing applied research, breakthroughs and technologies => Arctic Innovation Center => "Arctic" Interregional Innovation System

Creating NEFU personnel resource rapid development system

Integrated development of NEFU facilities and resources and sociocultural infrastructure => all year round resource centre for people of all ages

Modernizing the University management system

Nurturing high quality students

Preserving and developing linguistic and cultural diversity in North-Eastern Russia

Providing competitive personnel potential for the economies of Yakutia, Magadan Oblast, Kamchatka Krai, Chukotka Autonomous Okrug

6

The first five years are a beginning, a period for laying a solid foundation for further development.

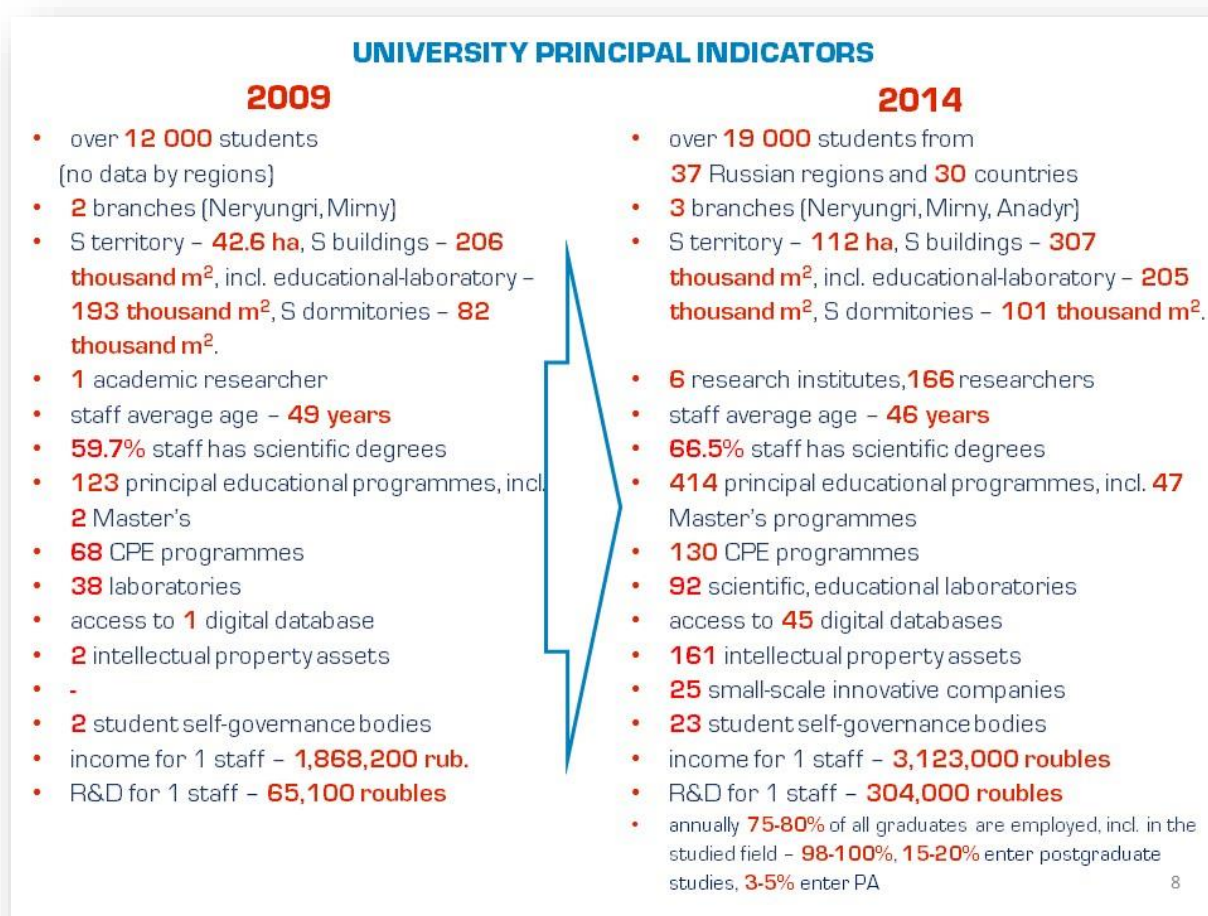
There are over 19 thousand students from 37 regions of Russia and 30 foreign countries studying in North-Eastern Federal University as well as over 600 postgraduate students, interns, medical residents, and doctorate students. The University employs over 5 thousand staff, including 1,628 professors and 166 academic researchers.



The University is comprised of 13 institutes, 6 faculties, 6 scientific research institutes and 2 colleges. The University has three branches: Technology Institute in the city of Neryungri, the heart of the coal province of the Russian Far East, Polytechnic Institute in the city of Mirny, the centre of the diamond mining industry of Russia, and Chukotka Branch in the city of Anadyr, the capital of Chukotka Autonomous Okrug, which previously did not have a higher education institution offering a full learning cycle.

During the five years of the existence of NEFU, its **main indicators have experienced a significant growth**. For example, since 2009, the total area of lands belonging to the University on the right of operational management has increased 2.6 times and reached 112 hectares. The total area of buildings and facilities has increased from 206 thousand square metres in 2009 (including educational and laboratory facilities 193 thousand square metres) to 307 thousand square metres in 2014 (educational and laboratory facilities – 205 thousand square metres). The total area of dormitories increased from 82 thousand square metres to 101 thousand square metres. There has been a rapid growth in the number of principal educational programmes from 123 in 2009 to 414 in 2014. Investing in research and teaching personnel has led to a number of people with degrees rising from 59.7% to 66.5%. The average age of

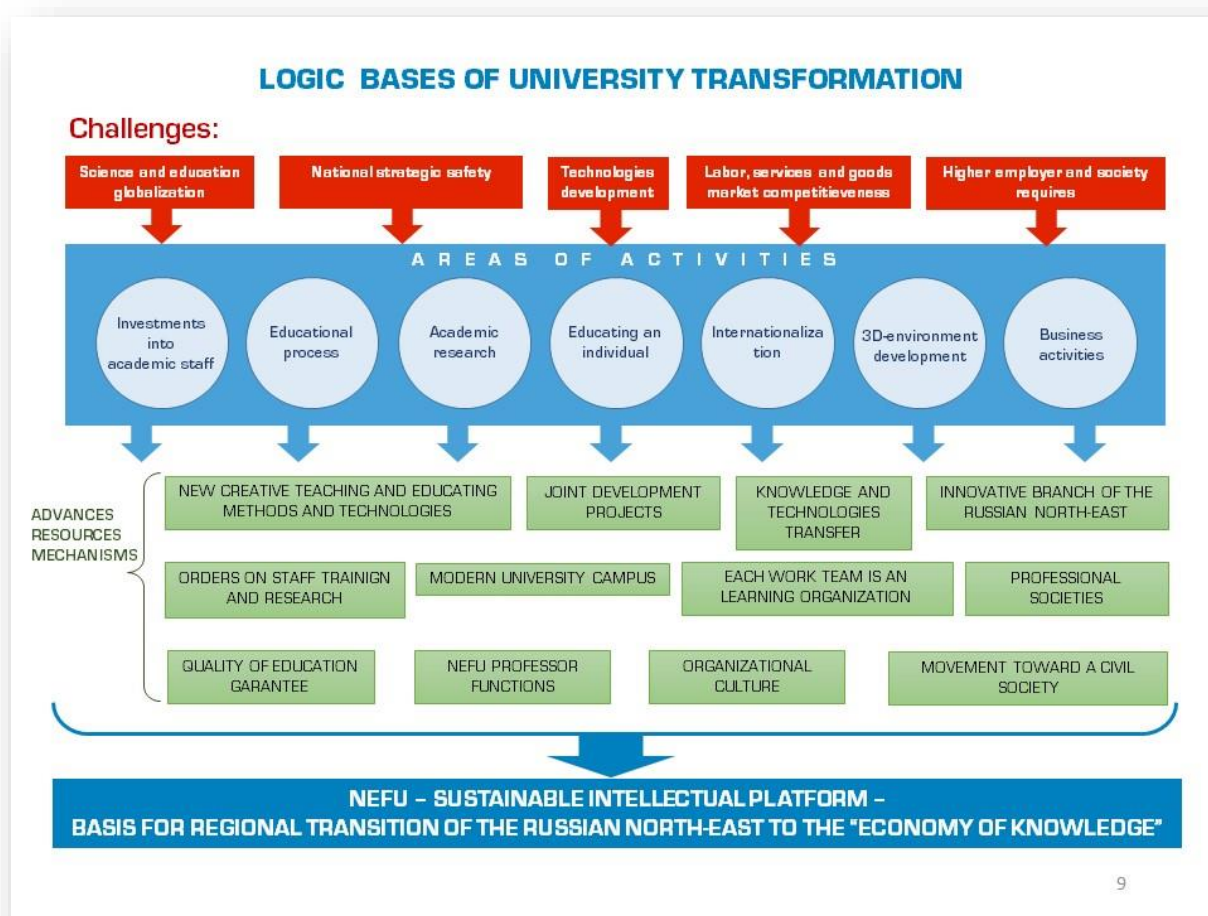
research and teaching personnel has fallen by 3 years to 46 years. During these 5 years, **the scientific and innovative potential of the University has grown tremendously**: in 2009, the University had only one academic researcher, while today it has 166 academic researchers working in 6 scientific research institutions. NEFU opened and operates 92 new scientific, educational-scientific and scientific-technological laboratories (in 2009 – 38 laboratories) and has access to 45 digital databases (in 2009 – 1). Funding of Research and Advanced Development for 1 academic researcher has increased 4.7 times from 65.1 thousand roubles in 2009 to 304 thousand in 2014. 161 intellectual property assets have been formed at the University in 2014 (in 2009 – 2 intellectual property assets), 25 small-scale innovative companies have been opened.



At present, the foundation exists and necessary conditions are being created for transforming NEFU into a world-class university. **The logic of transforming** NEFU is based on defining five challenges facing the University and the higher education in general: globalization of science and education, ensuring the strategic security of the country, raising the requirements of employers and the society, development of

technology, and growing competition in the labour market and markets for goods and services.

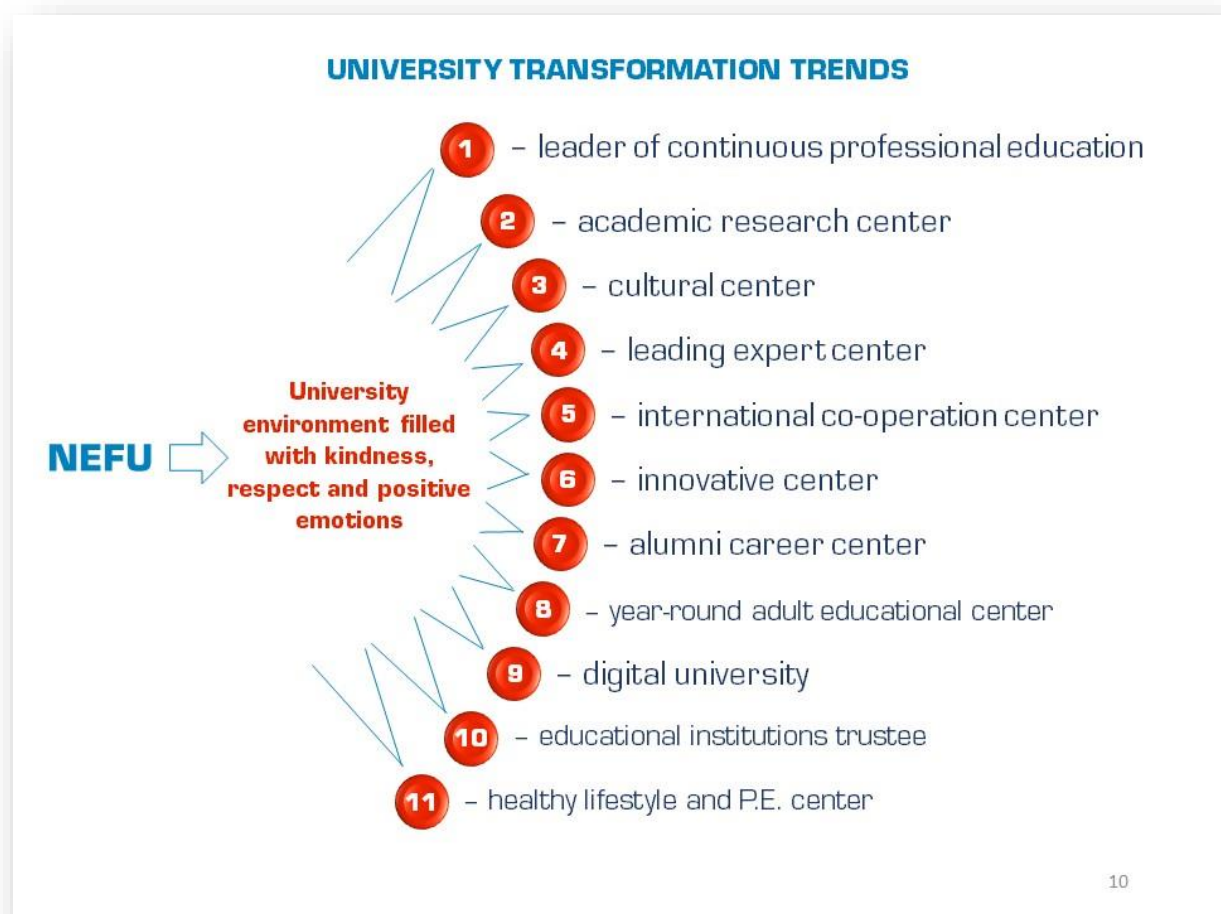
In accordance with the goals listed above, there are **seven main areas of activities**: educational process, academic research, investments into academic staff, internationalization, educating an individual, 3D-environment development, and entrepreneurship. The University needs stable mechanisms, which cannot be created in a day, however, it is these mechanisms that play the key and fundamental role in the process of transformation, in order for all these changed elements to interact and support each other thus creating an atmosphere of constantly increasing effects. The interacting elements and the increasing flow of changes is becoming the main transformation impulse of the University as a unified institutional body.



Today, summing up the preliminary results, we can say without doubt that, owing to a co-operative work of all the divisions interested in the success and owing to the aim to reach the set goals and the implementation of the Development Program, support of the Governments of the Republic of Sakha (Yakutia), Chukotka Autonomous District, the Magadan Region, the Ministry of Education and Science we have the following trends of sustainable changes:

NEFU is:

1. A leader of continuous professional education;
2. An academic research center;
3. A cultural center
4. A leading expert center;
5. An international co-operation center;
6. An innovative center;
7. An alumni career center;
8. A year-round adult educational center;
9. A digital university;
10. An educational institutions trustee;
11. A healthy lifestyle and P.E. center;



The activity of the University staff is guided by one principle idea – **forming a University environment full of kindness, respect and positive emotions**. In order to educate and socialize the youth of the 21st century, such an environment is, perhaps, a necessary feature. I will not be mistaken if I say that the Development Program, the new status of a Federal University have changed everyone in the University.

The aims of educating and upbringing an individual, creating leaders, preparing experts in the fields of science, education, business, politics, non-

government organizations, public organizations, and leaders have changed. The goals are aimed at developing the creative abilities of the young generation, and it is based not only the ability to pass on knowledge, but it is also aimed to teach students how to memorize and store information, the mechanisms of memory work, the skills of thinking, technologies of learning how to learn and learning how to think.

Within the 2010-2014 period we accomplished the main task of the first stage of development of the North-Eastern Federal University – the creation of a system of academic and educational processes, strategic planning and monitoring, transition to a level-based education as a basis for dynamic development of the University, and creation a leading academic center of the North-Eastern Russia on its territory.

Year by year, we have made a series of managerial decisions, which are a combination of old and new trends, stability and changes, traditions and new ideas.

II. NEW MANAGEMENT SOLUTIONS

2010

- New procedural and institutional status of NEFU – autonomous institution
- Rector meetings with academic and scientific divisions and departments
- Development and acceptance of NEFU Development Program for 2010-2019 period
- New offices - NEFU Development Program Management and Coordination Council
- New staff positions – Vice-Rectors for Natural and Mathematical Education, Humanities Education, Pedagogical Education, Technical Education, and Corporate Policy and Culture
- Development and approbation of a Learning University model
- Opening of the Chukotka branch in Anadyr
- The opening of the Arctic Innovations Center (AIC)
- Acceptance of the NEFU Corporate Culture Codex – a Code of Honor for the teachers, students and staff
- New tradition – The Freshman's Oath at the annual Freshman's Day
- New forms of students council
- Student and staff additional foreign language courses
- NEFU Council of Tutors, revival of an institute of tutorship in enterprises, companies and regional institutions
- New tradition – Annual University Freshmen Conference
- New Student Intellectual Development Council
- New Creative Student Development Council
- New NEFU Supervisory Council. Head of the Council – S.N. Mazurenko, Vice-Minister of Education and Science of the Russian Federation

NEW MANAGEMENT SOLUTIONS

- Implementation of government orders of the regions, enterprises and other organizations
- Multidisciplinary Teams on developing joint educational programs with other universities, including foreign institutions
- Young researchers were invited to NEFU
- Academic and scientific laboratory of adaptive computer technologies (ASLACT) for to create an inclusive education environment for people with special needs
- Institutes and Faculties Development Programs and Projects developed and adopted by the NEFU Academic Council for the 2010-2019 period
- University's development progress monitoring system
- Document basis of legal and regulatory aspects of NEFU
- Implementation of Quality Management System (QMS) elements
- Partnership with the leading academic centers and companies of the Russian Federation on joint academic research and specialist training
- Agreement on joint academic research with the ALROSA Company
- Audit, inventory count and organization of facilities and scientific equipment rational use
- Development of a unified academic basis of multi-level professional education in all the educational trends
- Development and adoption of the NEFU Campus General Plan
- Multilingualism in Cyberspace Support Center
- Professional societies of NEFU teachers, alumni, and specialists
- North-Eastern University Academic District Association
- Financial and economic audit in NEFU

12

NEW MANAGEMENT SOLUTIONS

2011



- NEFU Policy on Quality Education, Quality Guarantee and Standard Compliance Procedure
- Re-organization – 2 universities and 4 scientific research institutions become a part of NEFU
- Optimization, liquidation of duplicating major academic programs, strengthening specialty programs
- Strategic Planning System
- Transition to a 2-level system of education – starting from the 1st year students
- Points and Rating System (starting from the 1st years in all the academic institutions)
- Development and implementation of the Concept of European Quality of Education Instruments Transfer
- Development and initial stage of implementation of the credits and module system of education
- Evaluative means development and implementation – application interpreted model and their expertise
- Institute of Continuous Professional Education – Program of Open-Access Post-Graduate Education for All
- Web-department Informational and Educational Portal
- Teachers and scientific staff compulsory personnel evaluation
- Concept of Young Scientists System development, Concept Implementation Plan
- New tradition – Annual University Alumni Conference

13

NEW MANAGEMENT SOLUTIONS

- Implementation of the "Investments in the Development of Academic Staff" Learning University Model
- New academic positions – Research Professor, Research Associate Professor, Tutor Professor, Trainee Researcher
- North-Eastern School Olympiad
- New multi-level system of staff stimulation payment
- Four all-University contests on involving leading international scientists (2012-2014)
- New YSU-NEFU Alumni Association
- NEFU Endowment Fund, Student and Post-graduate Academic Mobility Program
- New "Summer Vacation" International Institute for academic staff
- New "NEFU Campus Card" project implementation
- Signed agreement between UNESCO and NEFU, new international Department of UNESCO – Social and Human Adaptation in Arctic Regions in the Conditions of the Climate Change and Globalization
- Partnership with the University of Cambridge and other universities
- Signed agreements with Yakuttsement Co., Yakutskenergo Co. and the National Medical Center of the Sakha Republic (Yakutia)

14

NEW MANAGEMENT SOLUTIONS

2012



- "NEFU – year-round and life-long resource center for education, science and culture for all the people of the Far Eastern region"
- Adopted Education Quality Guarantee Concept
- Social and professional and international educational programs assessment
- New Complex Energy Efficiency Learning Center in the Far Eastern Federal District (Federal Contest results)
- Developed strategy of social and economic development of the Yakutsk town district until 2032 (Municipal Contest results)
- New "From the very beginning..." mother and child support Family Program
- New School of Democratic Culture
- New NEFU Student Coordination Council
- Foresight of the Sakha Republic (Yakutia) until 2050 research
- Signed contracts with Sakhatransneftegaz Co. and the University of Cambridge
- Science and Education in the 21st Century: Role of the University in the Innovative Development of the Region International Conference together with the Hankuk University of Foreign Studies (the Republic of Korea) – over 3000 participants
- Developed and implemented systems of academic staff financial stimulation
- Developed Action Plan on the internal services transfer and outsourcing
- Partner project with the Bridgestone company in Japan
- New NEFU Parents Federation

15

NEW MANAGEMENT SOLUTIONS

2013

ГОД ИЖДАВЫН 2013



- Government assessment of the Yakutsk-Expert Testing Center on Building Materials Testing and Certification
- Opening of the Clinic of the NEFU Medical Institute, together with Simulation and Phantom Centers
- Network co-operation between the federal universities (NEFU – coordinator of the following network projects: "Student Council" and "Endowment Funds Development", initial stage of the network educational programs implementation)
- Certificate of International Standard of the NEFU management system
- Opening of the first foreign branch in the Linyi University (China)
- Development of the University, Government, Business and Social Organizations Partnership Program
- 4 NEFU representatives elected as members of Parliament and 1 representative – as the Deputy of the Yakutsk Duma
- November 9, 2013 – Members of Parliament of Yakutia and NEFU Academic Council joint meeting on the NEFU development trends in the context of Yakutia's social and economic development
- Agreement with Skolkovo Institute of Science and Technology with the goal of developing educational technologies for educating a new generation of engineers, implementing the CDIO standards and carrying out joint scientific and technical projects
- Agreement with Gazprom company on personnel training and scientific research
- New NEFU Board of Professors
- Cleaning services transfer for outsourcing purposes
- Personal Professional Standards of a Teacher project development
- Agreement with the Keele University (UK)
- First NEFU Science Festival
- Adoption of the new NEFU Supervisory Council lead by AA. Klimov, Vice-Minister of Education and Science of the Russian Federation (May 13, 2013)
- NEFU digital trade platform

16

NEW MANAGEMENT SOLUTIONS

2014

ЗНАНИЕМ К УСТОЙЧИВОМУ



- New policy of earned income
- Search for institutional partners
- New Department of Quality Education created on the basis of the Academic Affairs Office and the Quality in Education Office
- Participation in the Rosobrnadzor project on the independent university student knowledge evaluation
- Launching of a new "Yakutsk Global University" project to develop distance learning educational programs
- 3rd International Conference on Linguistic and Cultural Diversity in Cyberspace under the aegis of UNESCO
- Analytical and expert guidance of the region's social and economic development (analytical materials on the key issues of social and economic development of Yakutia, Yakutia's Development Program – until 2020)
- Signed agreements with the ALROSA Company, Yakutsk Fuel and Energy Company, and the Eastern Energetic Systems Company
- Established co-operation with the Toyota Company
- NEFU inclusion into the complex program of Gazpromburenie Company, with Krasnodar Bureniye Company as the key partner

17

NEW MANAGEMENT SOLUTIONS

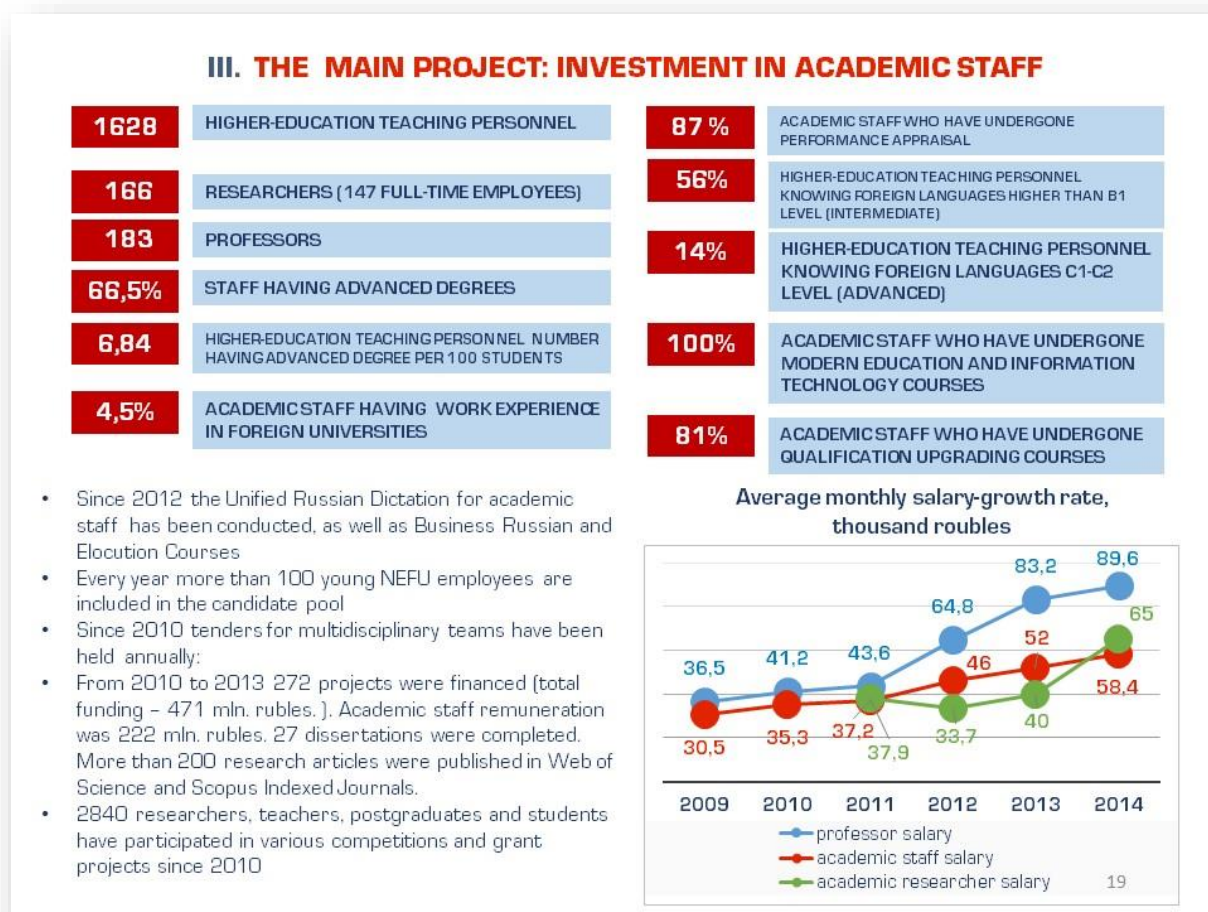
- All-Russian conference, held by Ministry of Education and Science of the Russian Federation, "Energy efficiency. Education and science"
- Business game within the II Yakutia Engineers conference "Economics of future. Origins: the Battle of projects"
- Agreement of the Sakha Republic (Yakutia) with the Board of Rectors in Tomsk Oblast higher education institutes
- Establishment of REC "Smart instrumentation technologies and automatic industrial control" in cooperation with National Instruments
- North Eastern education forum "The importance of the university in sustainable development of the region" with participation of plenipotentiary representative of the president of the Russian Federation in Far Eastern Federal District A.V. Motovilov, representatives of executive authorities of Far Eastern Federal District subjects and the Board of Rectors of Far Eastern Federal District higher education institutions
- Opening of research department "Computer technologies"
- Confirmation of incentive payments establishment within an effective agreement for deans of faculties, principals of institutes, heads of departments with basic effectiveness indicators setup on main fields of concern

18

Realization of specific managerial decisions adds to the achievement of declared goals, providing establishment of **multilevel academic and educational, innovational, expert and analytical complex**. This was confirmed by the research of the NEFU role and potential in the development of the Sakha Republic (Yakutia), North East District, the country as a whole, conducted by the National fund of personnel training and self-examination, Higher School of Economics. First, it is the change in the students' profile. The image of the University as a federal institution attracted well-prepared applicants. The average final exam grade of student enrolled in the University has considerably grown. Implementation of new educational programs, 100% of qualitative work experience and 98-100% of employment or occupation of alumnus stimulate students from other regions and countries to enter NEFU. Active expansion of academic, innovative and implementation results, educational activity of the University, enlargement of the academic research spectrum, establishment of smaller innovative enterprises, the reliable system of security and commercialization of intellectual property contributes to activation of creative activity of inventors from PPS, strengthening bonds with industrial companies and institutions, realization of joint scientific research projects, expansion of enterprise contracts, rendering expert, advisory, and analytical services.

Generated academic and educational, organizational and innovational backlog is one of the fundamental elements of the active development of the University towards the chosen priority directions, its integration in the social and economic space of the Russian North-East and compliance with the Federal and international standards.

The University's activity efficiency is firstly determined by work of academic and teaching personnel. One of the priorities of NEFU Development Program is **investing in the academic staff.**



Today's total number of NEFU faculty amounts to 1628 people and 166 academic employees.

66.5% of academic and teaching personnel have academic degrees. For the past three years, 85 of employees have successfully defended a dissertation, 12 of them have Doctor of Science, 73 – Candidate of Science, 4 – PhD degrees. The average age of the academic staff is 46, including 49 researchers with Candidates degree and 62 Doctors of Science.

4.5% of the faculty have working experience in foreign universities. At present, NEFU professors work in South Korea, China, Japan and US universities.

Great work is done **on attracting researchers with high reputation in the academic circles**. Thirteen leading scientists of the University have won a contest on organization of academic research on the commission of the Ministry of Education and Science of the Russian Federation in 2014-2016.

In QSBRICS World's Higher Education Institutions Rating in 2014 NEFU took **the 84th position by number of foreign professors and academic staff**, involved in academic and educational activity, among higher education institutions of five countries. Now NEFU has 14 foreign professors working on continuing basis; more than 170 visiting professors from abroad take part in various academic and educational projects.

The average monthly salary of the faculty has increased by 1.7 times in four years and makes 58.4 thousand rubles a month. In 2014, the average monthly salary of professors has increased by 2.5 times, compared to 2009, and made the total of 89.6 thousand rubles a month. The salary of leading scholars – organizers of the academic activity, who have won Academic Research Organization contest for the period 2014-2016 on the state commission of the Ministry of Education and Science of the Russian Federation, is 171 thousand rubles a month.

In order to promote the employees professional self-realization, **the system of materialistic stimulation** of academic and training personnel has been implemented. It includes one-time payments for defending a dissertation (Candidate's – 100 thousand rubles, Doctor's – 200 thousand rubles), academic advising (Candidate's work – 75 thousand rubles, Doctor's work – 100 thousand rubles) and publications in leading academic publishing houses; stimulating bonuses on the accomplishment of the University development index according to rating results; rector's grants in total of 200 thousand rubles on professional advanced training for educational and academic staff; rewarding of employees who have worked for over 30 years with the Honored Veteran of NEFU badge with a monetary award of 50 thousand rubles. The University society "Glory and Greatness of NEFU" was established. The first block of flats for NEFU professors and tutors with 41 flats, built by Leader Company of the university at the expanses of people, was brought into use in 2014.

With the purpose of professional development of the faculty and academic workers, **a comprehensive program of refresher courses** is realized: over four years the whole faculty have attended courses in modern educational technologies, methods of developing, teaching and assessing innovative curricula. Since 2012, the University's staff takes dictation on the Russian language and courses on business Russian and the culture of speech.

Since 2010, the academic staff certification on job competence is carried out. Today 87% of the academic staff has been certified.

Every year more than 100 young professionals of NEFU join the personnel reserve, take training courses and seminars on professional and management competence development and have an opportunity to study in the world's top universities and research centers.

In 2013, **an effective agreement system** for researchers was introduced; it provides the payment that allows concentrating on academic activities.

In 2011, with the purpose of academic process continuity and increase in academic activity effectiveness, **there were introduced new positions:** research professor (9 people), research assistant professor (13 people), and research assistant (23 people). Their main goal is to organize research activity among students, create research clubs, research and education centers, and laboratories, as well as postgraduate and PhD student's management. The results of research activity are obvious – the amount of research articles and citations has increased, as well as the number of students interested in research work and many other things.

ACADEMIC STAFF	
NEW ACADEMIC RANKS (introduced in NEFU since 2011)	
RESEARCH PROFESSOR	9 pers.
RESEARCH ASSOCIATE PROFESSOR	13 pers.
RESEARCH ASSISTANT	23 pers.
MENTOR PROFESSOR	13 pers.

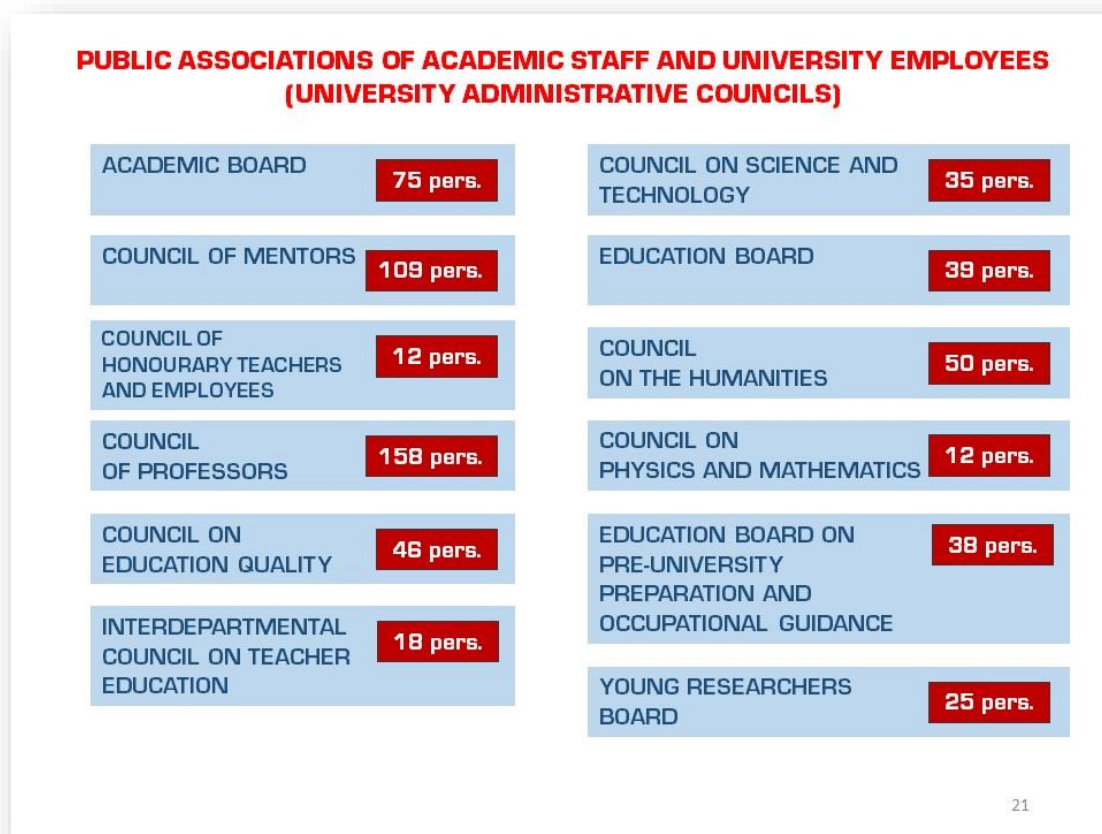
The introduction of research studies and their applications in education and socio-economic development of the region, research team development. Teaching loads for research associate professors and research professors are reduced to 150 and 200 academic hours respectively

Preparing for postgraduate studies and research work, including researches within the selected project, analysis of publications, carrying out calculations, working with databases and processing

Assistance in coordinating and monitoring of educational and scientific work, comprehensive methodological support for assistant lecturers and senior lecturers to acquire teaching skills and pedagogical excellence, freshmen adaptation to university life etc.

20

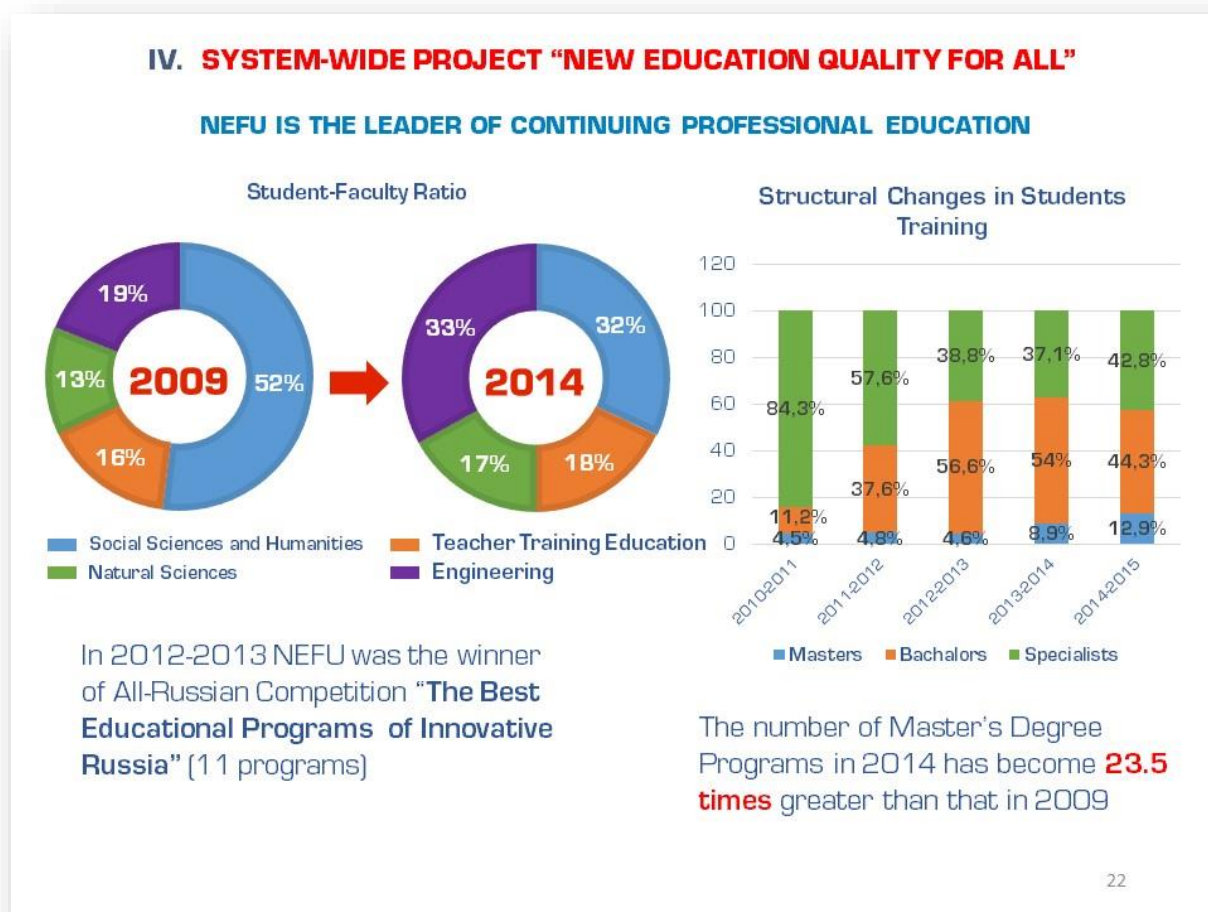
In 2010 **the Board of Mentors** was formed. It is a representative advisory-consultative body of the University that unites more than 100 actual teaching staff of up to 70 years old who have considerable experience in higher education system, authority and the Republic of Sakha (Yakutia) recognition. The Board is run by Professor Innokenty Semenovitch Sivtsev. It deals with making a mentorship in various enterprises and agencies, contribute to graduate employability process, student's work experience, research and education centers, laboratories and small innovative enterprises activities. In 2011 was installed a position of **the mentor professor** (13 people) to help to work out teaching and guiding, freshmen adaptation and individual counseling for students and young teachers. Mentor professors are N.K. Alekseev, O.S. Kornilova, V.P. Kochnev, V.S. Lukovtsev, G.A. Mordinova, M.N. Mordinova, A.G. Novikov, N.M. Okhlopkov, T. P. Rodionov, I.S. Sivtsev, L.E. Sleptsov, I.I. Suzdalov and R. S. Tazlova.



There are 183 professors in the University. In 2013, **the Board of Professors** was established. It is a consultative body, the goal of which is to regulate corporate policy and increase the role of professors in the University's development. The Board considers basic issues such as implementation of rights concerning educational and research activity and observance of students rights. The Board consists of 21

professors and Professor Dmitry Alekseevich Danilov, EdD, and the chair – corresponding member of Russian Academy of Education.

The Board of Veterans, which includes 12 people and the chair Yuri Timofeevich Polovinkin, is very active. The Board's activity is aimed at involving NEFU veterans in the work of the University's divisions, taking young teachers and staff under patronage, handing over experience to young generation, providing comprehensive assistance for veterans, participating in collective body management and the University's common development.



NEFU implements **21 academic programs**. In the 2014-2015 academic year, we train specialists in 414 basic educational programs within 228 majors of higher vocational education.

NEFU is being transformed into **a university with a range of master's degree courses and postgraduate courses**. Over the five years, the number of master's degree programs has increased by 23.5 times. Preparation of the academic staff is conducted in 57 postgraduate programs and 5 doctoral programs. We also train specialists in 20 internship training programs and 23 clinical residency programs.

NEFU IS THE LEADER AMONG OTHER HIGHER LEARNING INSTITUTIONS IN THE MACROREGION

- Since 2011 – Transition to Level Rated Training and Introduction of Credit-Unit System from the first-year to the final year
- Since 2011 - Knowledge Assessment System Development, Introduction of Point Rating System from the first-year to the final year
- Since 2011 - Expansion in the number of educational programs. Establishment of professional societies in association with employers. Preparation of public discussions, inspections etc.
- 2012 – Authorization of Quality Assurance Concept in Higher Education
- Since 2012 – Accreditation of educational programs in association with foreign partners
- In 2013 eight educational programs were accredited in accordance with ENQA standards (The European Association for Quality Assurance in Higher Education)



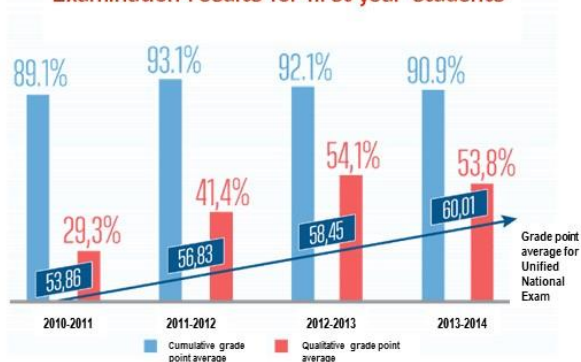
2013 – Performance of certification audit. NEFU obtained the IQNet Certificate confirming that NEFU Quality Management System conforms to ISO 9001:2008 standards for designing and development of educational programs, as well as scientific and innovative activities

- November – December 2014 – Accreditation of higher education programs for Bachelor's, Master's and Specialist's Degrees
- 2015 - Six-Year Accreditation Status Order № 8 of 13 January 2015 has been endorsed by the Federal Education and Science Supervision Agency

23

NEFU IS THE LEADER AMONG OTHER HIGHER LEARNING INSTITUTIONS IN THE MACROREGION

Examination results for first-year students



- The employers have endorsed all educational programmes
- We have signed long-term contracts with more than **440** big companies to develop job-related training
- **100%** guarantee of on-the-job training for students
- In 2014-2015 academic year we provide training in **6** network programmes, **4** of them in affiliation with foreign universities (China and France), **2** - with the other Federal Universities (North Arctic Federal University, Baltic Federal University, Ural Federal University)

The rise of Unified National Exam minimum scores

Course Units	2009	2014 (per cent rise)
Mathematics	40	engineers - 50 (25% rise) mathematicians - 60 (50% rise)
Physics	36	45 (25% rise)

24

The employers have endorsed all educational programs. We have signed long-term agreements with more than 440 big companies to develop job-related training. These companies are ALROSA, Almazy Anabara, Sarylakh-Surma, Nizhe-Lenskoe, Yakutskenergo, Sakhaneftegaz, Telen, Gazprom, Surgutneftegaz, YATEC, Industrial Group “Yakuttsement”, State Unitary Enterprise “Committee for Precious Metals and Stones of Sakha Republic (Yakutia)”, etc. We work actively to frame new approaches to develop some job-related training programs. Students have a 100% guarantee of on-the-job training. In the academic year 2014-2015, we implement 8 applied bachelor’s degree programs. The proportion of the students in the applied bachelor’s degree programs will be 14% in 2016. NEFU actively participates in the network educational projects. In 2014, we provide training in six network programs, four of them in affiliation with foreign universities, two - with the other Federal Universities.

As the **leading educational center of Social and Economic Development Strategy of the Far East and the Baikal Region**, NEFU trains students in the following majors:

1. The Institute of Physics and Technology trains students in heat-power engineering, thermal engineering, electrical power engineering and electrical technology to develop hydropower engineering and create the South Yakutia hydraulic power system.

NEFU – THE LEADING EDUCATIONAL CENTRE FOR REALIZATION OF THE STRATEGIES FOR THE SOCIO-ECONOMIC DEVELOPMENT OF THE FAR EAST AND THE BAIKAL REGIONS
(Government Order No.2094-p of 28 December, 2009)



2. The Faculty of Road Construction and Neryungri Technical Institute train students in mechanic engineering, transportation and processing operations to build roads and ensure reliable transportation service in the North.

3. The Institute of Engineering and Technology and the Institute of Physics and Technology train students in construction engineering, land engineering and cadastral surveying, lumbering and wood conversion technology, art materials handling technology, architecture in order to develop low-rise housing construction technology in the Permafrost, energy efficiency and earthquake resistance of buildings, frost-resistant polymer composites technology.

**NEFU – THE LEADING EDUCATIONAL CENTRE FOR REALIZATION OF THE
STRATEGIES FOR THE SOCIO-ECONOMIC DEVELOPMENT OF THE FAR EAST
AND THE BAIKAL REGIONS
(Government Order No.2094-p of 28 December, 2009)**



26

4. The Institute of Medicine and the Institute of Natural Sciences are actively engaged in providing staffing services to develop medicine in the Arctic, chemical engineering for biological raw material processing, new biotechnology based on the use of unique natural arctic biological raw material in the pharmaceutical industry, food industry and agriculture. The Simulation Center equipped with computer modeling system and monitoring of students' knowledge with simulated doctor workplace has been established to introduce practice-oriented methods. On-line lectures are given in the operating room of the National Medical Centre of the Republic Sakha (Yakutia). This

operating room has been purchased through NEFU Development Program. Medical operations are being analyzed in the operation room. Training videos and programs are also being made there. We have created a modern technological base of educational and scientific laboratory equipment in shared mode that allows conducting research in medicine, biology and other areas. The Common Use Center in the Arctic medicine includes eight laboratories (immunological, clinical diagnostic, neuropsychophysiologic, microbiological laboratories, osteoporosis laboratory and genomic medicine laboratory, etc.).

NEFU – THE LEADING EDUCATIONAL CENTRE FOR REALIZATION OF THE STRATEGIES FOR THE SOCIO-ECONOMIC DEVELOPMENT OF THE FAR EAST AND THE BAIKAL REGIONS
(Government Order No.2094-p of 28 December, 2009)



27

5. The Faculty of Geology and Survey, the Institute of Mining, Neryungri Technical Institute and Mirny Polytechnic Institute train students in oil and gas engineering, geological exploration technology, underground mining, open-pit mining, mine construction, mining machinery and equipment operation, and automatic mining practice in order to execute projects for mineral resources development in Northeast Russia.

6. Modernization of the Russian Education System implies increased demands on teacher qualification. The Teacher Training Institute, the Institute of Sports and Physical Education, the Institute of Mathematics and Information Science, the Institute of Physics

and Technologies, the Faculty of Russian Philology, the Faculty of History, Neryungri Technical Institute and Mirny Polytechnic Institute train students in Pedagogy (preschool and primary education), Educational Psychology, Defectology, Computer Information Technology, Physical Education, Athletic Training, Physics and Computer Science, History, Mathematics, the Russian language and Russian Literature, etc. We provide the Basic Education System of Yakutia with qualified specialists.

NEFU – THE LEADING EDUCATIONAL CENTRE FOR REALIZATION OF THE STRATEGIES FOR THE SOCIO-ECONOMIC DEVELOPMENT OF THE FAR EAST AND THE BAIKAL REGIONS

(Government Order No.2094-p of 28 December, 2009)



28

7. In order to keep and save the traditional way of life of indigenous small ethnic communities of the Russian Federation, the Institute of Languages and Cultures of the Peoples of the North-East trains specialists in the Yakut, the Evenk, the Even, the Yukaghir, the Chukchi languages and literatures, in culture studies and in national artistic culture.

8. Geopolitical location, natural, cultural and historic factors allow to consider the Far East as one of the most promising tourist and recreational regions. To develop tourist and recreational activities with the realization of extreme and unique tourist programs and routes the Institute of Languages and Cultures of the Peoples of the North-East carries out such directions as “service” and “tourism”.

SCIENTIFIC INNOVATION CENTRE OF INCLUSIVE EDUCATION DEVELOPMENT

- **2010** – (ESLACT) Educational and scientific laboratory of adaptable computer technologies
- **Equipment:** Braille lines, Pronto orgaizers, digital video magnifiers, Perl video cameras, Everest Braille printers, embossed graphic aids producing devices, multifunctional dictaphones with Daze Plectalk, etc.
- **2011-2014** - 253 students with special educational needs attended ESLACT and gained methodological support
- **01.06.2013** – within ESLACT the North-Eastern scientific innovation centre of inclusive education development was founded which is now the only one behind Urals
- **Objective** – the development of methodological, technological and methodical issues of use of adaptive computer technologies for creation special conditions for students with special educational needs in their inclusive studies in higher education institute
- **21-23.09.2011 and 23-26.06.2014** – two international scientific and practical conferences on inclusive education problems were organized within NEFU



THE PROGRAMME FOR THE DEVELOPMENT OF FUNDAMENTAL MATHEMATICS EDUCATION IN NEFU

- October, 2012 - the Program for the development of fundamental mathematics education in NEFU was approved by plenum of educational methodical council on mathematics and mechanics of ERO of the classical university education of the Russian Federation.
- The educational and scientific laboratory of mathematical and computer methods of analysis was founded.
- The leading Russian and foreign scientists and professors of MSU, NSU, Keele University, Sobolev Institute of Mathematics of the Siberian Branch of the RAS are invited to deliver lectures.
- Seasonal mathematics schools are held at Lomonosov MSU (2013 – summer school, 2014 – winter and summer schools).
- Annual study placements in Keele University (Great Britain), Perpignan Via Domitia University (France).
- Students language study placement, participation in London International Youth Science Forum at London Imperial College.
- Cergy-Pontoise University's Master Program entrance of NEFU bachelors funded by a grant from France.
- The organization and the holding of the International conference on Mathematical Modeling (NEFU, NSU, Lavrentyev Institute of Hydrodynamics of the Siberian Branch of the RAS, Sobolev Institute of Mathematics of the Siberian Branch of the RAS)
- A cooperation agreement between NEFU and Mirzo Ulugbek National University of Uzbekistan was signed.

NEFU PARTENRS:



Lomonosov Moscow State University (Russia)



Cergy-Pontoise University (France)



Keele University (England)



30

THE PROGRAMME FOR THE DEVELOPMENT OF FUNDAMENTAL MATHEMATICS EDUCATION IN NEFU

- Programme results – the increasing of the students' professional and competence achievements levels: effective participation in the Olympiads of different levels, won exchange programme grants, grants for participation in summer schools, the participation of the students in the international conference, in the work on scientific grants
- NEFU students are the winners of the Open International Internet-Olympiads for the higher education students on Mathematics (2013, 2014)
- In 2012, 2013, 2014 the team of NEFU students became the total winner of the quarter-finals of the World Programming Championship among the higher education institutes of the Far East Region
- 17 December, 2014 – NEFU team took the 1st place in the Siberian group (44 teams from Siberia and the Far East), being ahead of such strong teams as NSU, Polzunov Altai State Technical University, TSU, SFU, Omsk State University etc., and, generally, won the second degree diploma in the International Programming Olympiad
- In the team rating of the International Mathematical Olympiad among students-mathematicians in 2014 the SFU students took the first place and the 3d year students of NEFU Institute of Mathematics and Information Sciences took the 1st place in the individual competition
- NEFU students won 2 silver medals of the Olympiad "South-Eastern European Mathematical Olympiad for University Students" (2014, Romania)

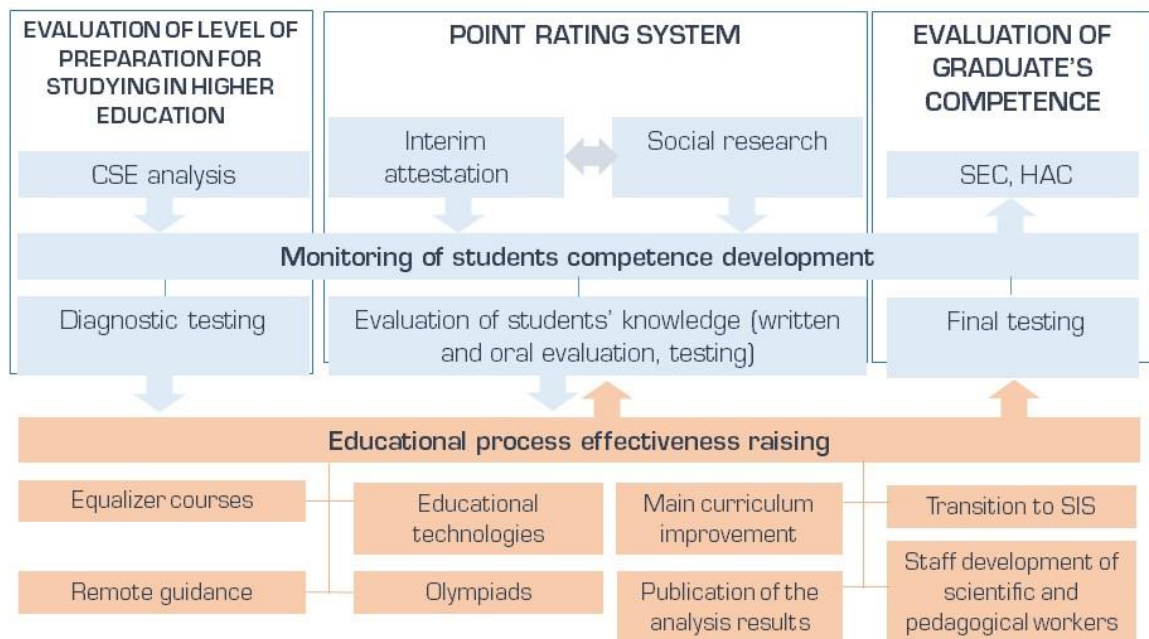
31

The increasing of passing score and the better selection of students to enter had a positive effect on the results of the first end-of-semester exams. According to the results of the winter semester there was a steady increasing of the success level of the first-year students, which is directly connected with the increasing the requirements to the quality of education of the applicants, with a high percentage of the Olympiad prize-winners, with a higher learning motivation.

INTRAMURAL QUALITY ASSURANCE SYSTEM

SEARCH FOR TALENTED STUDENTS	LEARNING ACTIVITY MODERNIZATION	STUDENT SCIENCE DEVELOPMENT	EXTRACURRICULAR ACTIVITY IMPROVEMENT	FORMATION OF HIGH QUALITY RESOURCE POTENTIAL	ENSURING UNIVERSITY OPENNESS
raising effectiveness of the activity of NEFU Educational District Association	innovative educational technologies implementation into the learning process	active attraction of students to scientific and research work, including participation in scientific grants	first-year student adapting to a higher educational environment	scientific and teaching staff continuous training	involving employers in planning, organization and holding the learning process
scientific education and targeted guidance of pupils	providing science and education real connection	strengthening the participation of students in the Russian and International scientific conferences, forums and exhibitions	personal growth, личностный рост, the development of student moral, cultural, creative values	improvement of training methodical and information and analytical system of the University	assistance in graduates' employment and monitoring their career growth
form and content improvement of work with gifted children and teenagers	evaluation, monitoring and quality checking of student study in accordance with federal and international standards (among the academic programs)	Scientific Research Institute assistance in students' scientific activity	students common cultural and professional competence formation	further development of logistical support of learning process	interaction with the real sector, social sector and business in the issues of staff career development
recruitment of qualitative applicants through NEOP (Olympiad)	development of own educational standards	Student publication activity growth	positive environment creation to develop students' self-government	NEFU digital campus system creation	
training, retraining and advanced training of teaching staff			development of Active feelings of citizenship and patriotism among students	creation of conditions to introduce distant learning technologies	strengthening positions of the University on the Regional, Russian and International levels

INTRAMURAL NEFU STUDENTS' KNOWLEDGE EVALUATION SYSTEM



33

The Regional social effect of NEFU is the training of qualified personnel required on the labor market, generating greater employment, the growth of new dynamic sectors, implementation of innovative achievements in the economy of the northeast of Russia.

A distinctive feature of NEFU is the **effective assistance in searching for employment of graduates**, which is based on closer partnership with real economy enterprises and organizations that act as the employers.

To achieve the full employment of all graduates the University has traditionally interacted with government authorities, with republican municipality, enterprises and organizations of the region and with other stakeholders. NEFU has more than 90 cooperation agreements with large manufacturing and infrastructural enterprises. The realization of joint projects and factory orders promote the establishment of NEFU as the center of engineering education and innovative development in the macro-region.

UNIVERSITY – THE CAREER CENTRE FOR NEFU GRADUATES

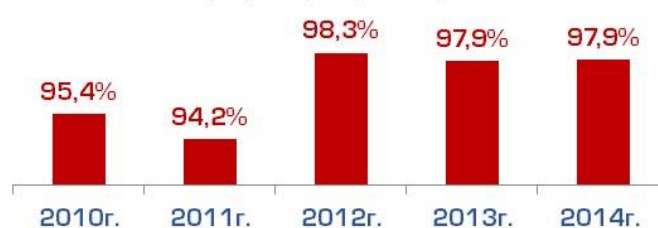
The largest employers:

OJSC Gazprom
 OJSC Surgutneftegaz
 OJSC Sberbank
 OJSC Rostelecom
 OJSC Mechel
 OJSC AK Alrosa
 OJSC HC Yakutugol
 OJSC AK Yakutskenergo
 OJSC Almazy Anabara
 OJSC Nizhne-Lenskoye
 OJSC Sakhatransneftgaz
 OJSC Aircompany Yakutia
 OJSC House Building Company
 OJSC AK Stock of Industrial and
 Gold Jewelry Company Yakutia
 LLC RPC EPL Diamonds
 OJSC Vodokanal
 CJSC EAST Siberia Gaz Company
 OJSC Vimpelcom
 OJSC Megafon
 CTC Media
 etc.

Employment and occupation of NEFU graduates, %



Employed by a specialty, %



The whole system of measures contributes to achieving high graduates' employment rates. The number of NEFU graduates to be employed in their own profession increases every year.

At the same time, according to the analysis, not only unemployed graduates seek assistance from employment services but also the employed one in order to find a better-paid and more prestigious job. In this context, in the monitoring it is necessary to take into account the proportion of full-time graduates who had sought assistance from employment services and were recognized as unemployed.

The University established the **system of continuous education** that combines all ground levels of educational process and makes contribution to lifelong self-realization, socialization, personal and career education and promotion. One of the main elements of this system is postgraduate and continuing professional education.

NEFU – YEAR-ROUND EDUCATION CENTRE OF ADULTS

STAFF CAREER DEVELOPMENT AND PROFESSIONAL RETRAINING OF THE SPECIALISTS OF OUTSIDE ORGANIZATIONS

Year	Completed training
2010	2638
2011	5455
2012	8068
2013	5367
2014	7311

About **130** programs are realized every year

PRESIDENT PROGRAMME of engineering and technical staff career development 2012-2014

105 engineers from **22** organizations

THE INSTITUTE OF CONTINUING PROFESSIONAL EDUCATION

INSTITUTE OF POSTGRADUATE EDUCATION OF THE INSTITUTE OF MEDICINE

BASIC REGIONAL CENTRE OF LABOUR PROTECTION

TRAINING AND METHODOLOGICAL CENTRES OF THE FACULTIES

ENERGY EFFICIENCY TRAINING CENTRE

CENTRE OF CONTINUOUS PROFESSIONAL TECHNICAL EDUCATION AND ATTESTATION

CENTRE OF INTELLECTUAL TECHNOLOGIES OF THE PSYCHOLOGY INSTITUTE

35

There are several subdivisions that implement CPE programs: the Institute of Continuous Professional Education, the Institute of Postgraduate Education of the Institute of Medicine, Basic Regional Centre of Labor Protection, Training and Methodical Centers of the faculties, Professional Advancement Centre for building complex workers, Energy Efficiency Training Centre.

About **130 Additional Education Programs** and nearly 30 Professional Retraining Programs of more than 500 hours are implemented every year. Between 2010 and 2013 over **20,000 workers of the Far-Eastern Federal District enterprises and organizations** attended further education and professional retraining courses. The University makes a substantial contribution to the continuing education of teachers.

At the end of 2012, NEFU became the winner of the Presidential Program for Advanced Training of Engineering. Seven professional development programs designed by the Institute of Continuing Professional Education in collaboration with academic departments of the University were selected: “Advanced Technology of Composite Materials Processing”, “Nanotechnologies under Conditions of Rapid Development of the Northern Territories”, “Construction Oversight of Roads in the

Permafrost Zone”, “Information and Communication Technologies in Medicine”, “Modern Technologies of Precious Stones and Metals Processing”, “Safety of Construction and Repair and Installation Quality of Electrical Networks”, and “Innovation in Improving the Safety and Quality of Construction in the North”. In 2012-2013, 105 employees of the federal district’s enterprises attended advanced training courses under the project.

NEFU implements a module of the “Energy Conservation and Energy Performance Improvement” subprogram of the Russian Federation State Program “Energy Conservation and Power Development” approved by the Order of the Russian Federation Government No. 512-r of April 3, 2013. Three hundred and one professionals from various enterprises of the Far East were trained under this project.

NEFU developed joint educational retraining programs: “Teacher of Higher School with Andragogic Education” with Narva College of the University of Tartu (Estonia) and “Legal Studies. International Private Law” in partnership with Bohai University (China).

One form of networking is the **North-Eastern University Education District Association**. The purpose of the Association is to improve the quality of general and vocational education on the basis of interaction between educational institutions and to attract competitive school leavers to NEFU to train competent professionals in innovation-based economy of the Far East.

UNIVERSITY – TRUSTEE OF EDUCATIONAL INSTITUTIONS

NORTH-EAST SCHOOL OLYMPIAD

NORTH-EAST SCHOOL OLYMPIAD	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015
Number of participants	9310	9070	15354	15733	40 000
RF regions / CIS countries	3	8	12	28 / 3	31 / 3
Number of winners having entered NEFU (% of winners number)	27%	46%	47%	45 %	

- NEFU is the organizer and co-organizer of 6 Olympiads in 10 subjects included in the **List of Russian School Olympiads**
- **NEFU Teacher of the Year and NEFU School of the Year** annual contests (2011 - 35 schools, 2012 - 42 schools, 2013 – 53 schools)
- Creation of **12 NEFU resource centers** in 5 regions of the Far Eastern Federal District

North-Eastern University Education District Association was established on December 11, 2010

2011 – 47 educational institutions

2012 – 55 educational institutions

2013 – 67 educational institutions

2014 – 83 educational institutions

including:

- 69 general educational institutions, among them:
 - o 5 EI of Magadan Oblast
 - o 1 EI of the Kamchatka Krai
 - o 1 EI of Sakhalin Oblast
- 7 supplementary education institutions
- 6 primary/secondary vocational education institutions
- **100 Master's Students common project** with Yakutsk City District

36

In 2014, the number of members of the Association has increased and reached 83 educational institutions of the Sakha Republic (Yakutia), Magadan Oblast, Kamchatka Krai, Chukotka Autonomous Okrug, Khabarovsk Krai, including 69 schools, 7 institutions of supplementary education of children, 6 institutions of primary and secondary vocational education. NEFU holds annual competitions to decide and reward best schools and best teachers of the northeast of the country. Twelve resource centers of NEFU were created in 5 regions of the Far Eastern Federal District, the University has junior academies to work with school students, and the Northeast School Olympiad is held annually (from 2010 to 2014 about 90 thousand school students from 31 Russian regions and 3 countries took part in it).

V. MAIN LINES OF RESEARCH



Fundamental mathematics, modeling of natural and man-made processes, information and computer technology



Material science, nanomaterials and nanotechnologies, alternative energy sources



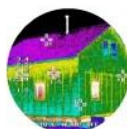
Technologies of construction, energy- and resource-saving



Biodiversity and biological resources, biotechnology of its use. Physiological, biochemical and medical aspects of health care in the North



Climatology, environmental safety, reduction of the risk and consequences of natural and anthropogenic disasters



Technologies of exploration, mining and processing of mineral resources



Ancient culture and ethnography, preservation and revival of the languages and cultures of the Arctic peoples



Psychological aspects of training and education, pedagogy

37

Research at the University is conducted in **eight major areas**:

1. The development and numerical implementation of the mathematical models of natural, man-made and socio-economic processes in the Arctic and Northern regions; development and study of mathematical methods and technique of computational experiment, its use in the modeling of natural and man-made processes; problems of mathematical cybernetics and its applications in the modeling of environmental and economic systems;

2. The problems of construction and life support in the North: quality, safety, energy- and resource-saving; new building materials and enhancement of the reliability of building structures in the North;

3. The provision of environmental safety and technologically effective reproduction of the mineral raw material base with the development of theoretical foundations and practical recommendations for the evaluation and prediction of gold, oil and gas fields on the basis of integrated geological and geophysical studies;

4. New materials for equipment of the North, technologies in industry, energy production, construction and on transport in the North. Energy efficiency, energy-

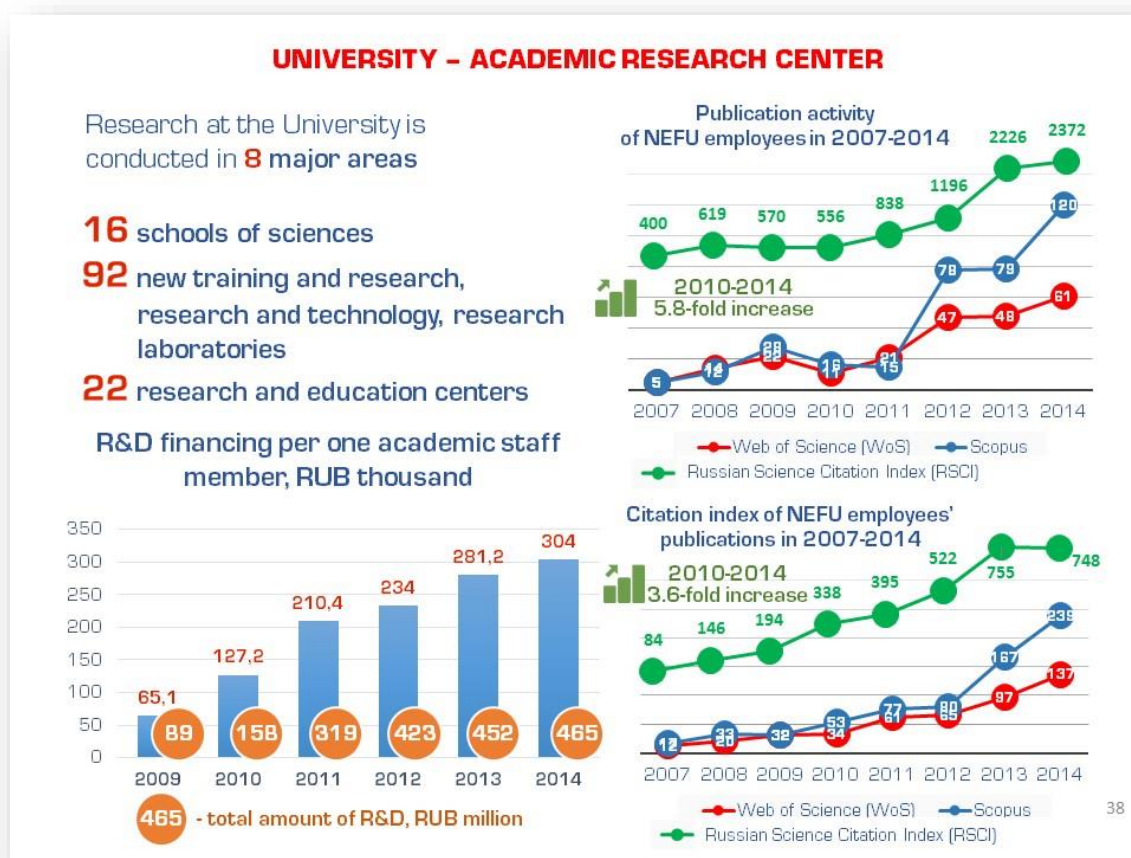
saving and alternative energy sources. Provision of energy, industrial and transportation security;

5. Integrated technologies of the extraction and processing of mineral resources under conditions of permafrost; technologies reducing the risk and consequences of natural and anthropogenic disasters, climate change processes;

6. The study of biological diversity and biological resources, development and implementation of the technology of its use;

7. Physiological, biochemical and medical aspects of health care in the North;

8. The study of the problems of an ancient culture, preservation and revival of the languages and culture of the Arctic peoples: national culture and philology; the problems of the interaction and functioning of languages and literatures in the Sakha Republic (Yakutia); cognitive linguistics and problems of linguistic consciousness, communication theory; archeology and ethnography of the indigenous peoples of Siberia.



The university formed **16 schools of sciences**. The total number of scientific workers is **166 people**.

Since 2009, the amount of R&D financing per one academic staff member **has increased 4.7-fold** and reached RUB 304 thousand in 2014.

From 2009 to 2013, the share of funds received by the University by performing R&D **increased 5-fold** in the total income. From 2010 to 2013, the share of R&D performed with the use of equipment of common use centers **doubled**.

With the increase of R&D funding the efficiency of the University's scientific research grew significantly. First of all, **the increase in publication activity** of employees: from 2010 to 2014, the overall increase is **5.8-fold** (RISC – 4.3, Web of Science – 5.6, Scopus – 7.5).

Alongside with the increase in publication activity, the quality of research conducted at the University has improved. Evidence of this is the increased interest in the University from leading Russian and foreign researchers, expansion in the number of joint projects, the growth of the citation index of publications. From 2010 to 2014, **the citation index** increased: RISC – 2.2-fold, Web of Science – 4.5-fold, Scopus – 4-fold.

Ninety-two training and research, research and technology, and research laboratories were set up, they are fitted with modern analytical equipment, including unique and expensive installations (39 units). For example, the Faculty of Geological Survey has laboratories on oil and gas drilling (“Technology of Oil and Gas Wells Drilling” and “Workover”) equipped with facilities complying with the world standards. On September 1, 2014, the Yakutsk Fuel and Energy Company (YATE) JSC set up at the Faculty a laboratory for drilling fluids and cement slurries in accordance with up-to-date requirements. Fitted with Russian-manufactured import-substituting equipment, this laboratory is designed to improve the efficiency of the construction of oil-and-gas wells at critically low temperatures and in the permafrost zone.

**A MODERN EQUIPMENT STOCK IS CREATED FOR SCIENTIFIC RESEARCH
IN ACCORDANCE WITH THE NEFU DEVELOPMENT PROGRAM**



39

Twenty-two research and education centers were established to integrate science and education.

Modernization of the University's research activities enabled successful participation of NEFU in federal tenders and programs.

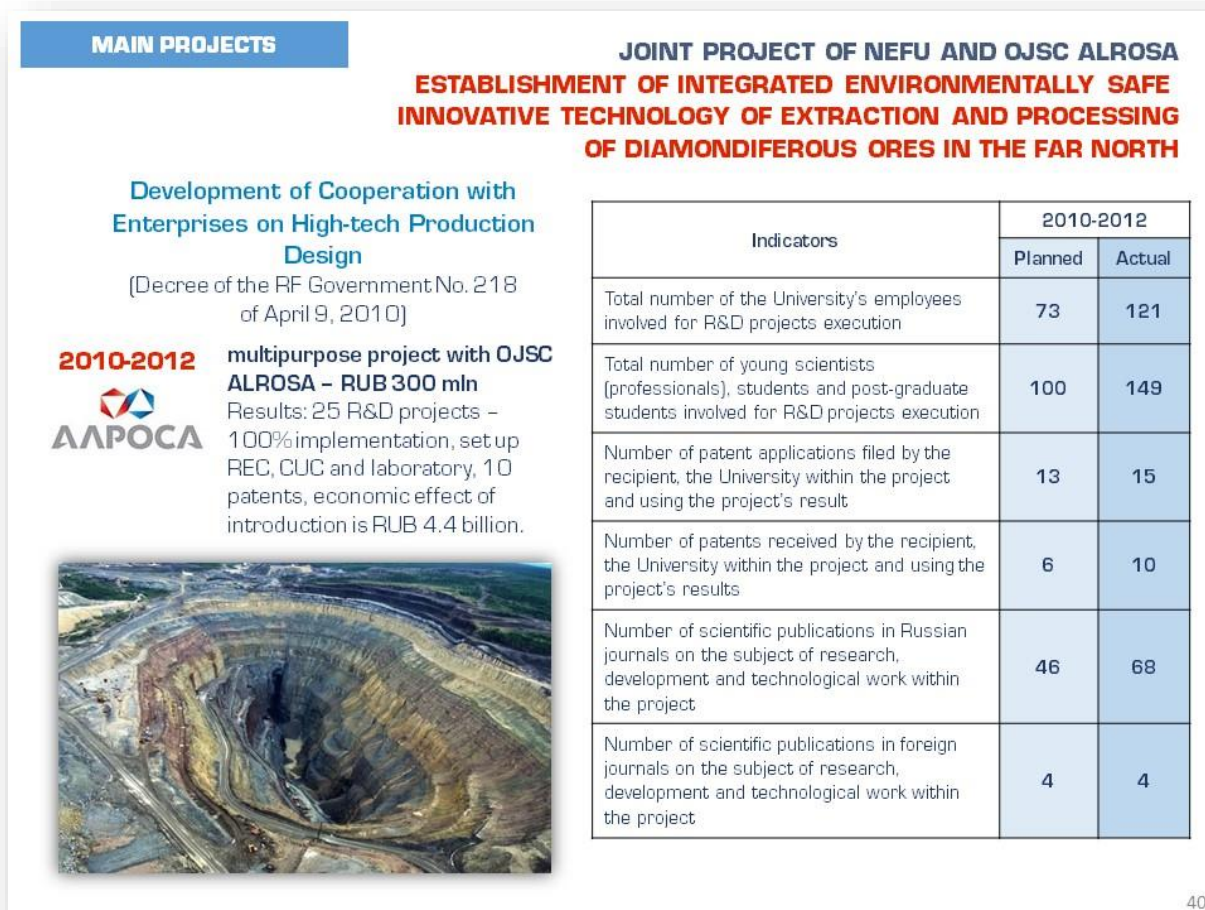
Under the Decree of the Government of the Russian Federation No. 218 of April 9, 2010 "On Measures of State Support for the Development of Cooperation between Russian Higher Education Institutions and Organizations Implementing Multipurpose Projects on High-tech Production Design" NEFU won the federal tender for financing of 2 major projects.

Together with OJSC ALROSA, NEFU implemented a multipurpose project on high-tech production design "Establishment of Integrated Environmentally Safe Innovative Technology of Extraction and Processing of Diamondiferous Ores in the Far North" valued at **300 million rubles**.

During the period from 2010 to 2012, **25 R&D projects** and technical works in 6 areas were performed at the commission of OJSC ALROSA. The following training/research and technology entities were established on the basis of NEFU with the participation of ALROSA: Geotechnologies of the North Education and Research

Center, Common Use Center (Mirny Polytechnic Institute (branch) - Yakutniiproalmaz Institute - ALROSA), Research Laboratory for Electrochemical Methods of Water Treatment (Processing Plant No. 3 and Mirny Polytechnic Institute). 119 academic staff members, 37 young professionals, 33 post-graduate students and 73 students of NEFU (262 in total) were involved for the execution of joint R&D projects over a 3-year period.

As part of a joint project of NEFU and ALROSA, 15 patent applications were filed and 10 patents were received in 2010-2012. Moreover, three items of intellectual property were registered as know-how in 2010-2011. Subsequent to the results of the project, 72 articles were published in Russian (68) and foreign (4) top-rated editions. The expected **economic effect** of the introduction of the project's results will be **about 4.4 billion rubles** (estimated by ALROSA management).



Since 2013 – NEFU and “OPTOGAN” JSC joint project “Intelligent Systems of Energy- Efficient Agricultural Production under Glass Using Led-based Lighting”. The total funding for the project is 350 mln rubles for the period of three years. It was planned to reduce the electricity share in the cost of greenhouse cropping production in the Russian Federation from 40-60% to 20-30%, thereby energy savings can reach

700 MW per 1000 square meters in leaf cropping and more than 1,000 MW in fruits and vegetables cropping. Construction of several facilities was started on the territory of NEFU Botanica Garden: an independent boiler house, a two-storied educational and laboratory building, a year-round greenhouse. Unfortunately, we are forced to look for other partners due to the appointment of OPTOGAN JSC new Director General S.E. Popper and his unwillingness to fund the company's obligations.

MAIN PROJECTS

NEFU AND "OPTOGAN" JSC JOINT PROJECT
"INTELLIGENT SYSTEMS OF ENERGY- EFFICIENT
AGRICULTURAL PRODUCTION UNDER GLASS USING LED-BASED LIGHTING"

Development of Cooperation with Enterprises on High-tech Production Design

(Decree of the RF Government No. 218 of April 9, 2010)

2013-2015



Российские светодиоды

The complex project in association with "OPTOGAN" JSC – 350 mln. rubles.

Reduction of the electricity share in the cost of greenhouse cropping production in the Russian Federation from 40-60% to 20-30%.







41

The projects to attract leading international scientists are implementing in order to consolidate efforts of NEFU and its international partners towards development of fundamental and applied research in the field of mathematical modeling, environmental safety, technologically efficient reproduction of the mineral resources base, environmental management carried out jointly by scientists of the Russian Federation and foreign countries.

Basing on results of the University contest (in accordance with the Russian Federation Government Decree No. 220 "On Measures to Attract Leading Scientists to Russian Institutions of Higher Education"), young researchers have been working under the guidance of leading scientists of Russia and other countries for three consecutive years.

There are two projects implemented under the guidance of leading scientists from the Republic of Korea:

1. Chemical technology of nanomaterials and hydrocarbon crude (Research Professor Jin Ho Cho, Myongji University)

2. Molecular genetic technology (Research Professor I.S. Zulfugarov, the Graduate School of Natural Sciences, Pusan National University).

The three year joint project on developing of the **technology of production of low-temperature lube oils** on the basis of Yakutian oil is implementing under the guidance of Dr. Jin Ho Cho, Professor of **Myongji University**. The following results were reached due to researches based on the analysis of physico-chemical properties, commercial properties and hydrocarbon composition of Yakutian oils: a database on oil was created; base oil which is produced of Talakan field oil was made; the base oil quality was improved (deparaffination, asphaltic-resinous components removal, sulfur removal); the main performance characteristics of the base oil were defined; resulted oils were compared with standard Yubase 4 oil (Korean production) and Ravenol SSL 0W-40 mineral oil; the possibility of creating a low-temperature lube oils with a pour point of - 50 ° C on the basis of oil fractions from Talakanskoe deposit using depressor additive-methacrylates was proved. The final product will be able to withstand extremely low temperatures up to - 60 °C - -70 °C and can be used in the northern and the Arctic regions.

MAIN PROJECTS






Project Supervisors:
 Research Professor **Jin Ho Cho**, Myongji University (the Republic of Korea)
 Research Professor **A.A. Okhlopkova**, PhD, Head of "Nanotechnology" Research and Educational Center

- the formula of oil with a pour point below -64°C was developed;
- technology for base oils production of Yakut oils operable under the temperature up to -70 °C using Korean additives was developed;
- an approval for the US patent granting was received; an application for the know-how on low-temperature lube oils production was made;
- a team of young researchers was created;
- KAIST grant was won (the Republic of Korea)

THE PROJECT ON DEVELOPMENT OF TECHNOLOGY OF COLD-RESISTANT LUBRICANTS (2012-2014)

Chemical technology of nanomaterials and of hydrocarbon crude







UST

KOREA UNIVERSITY OF SCIENCE & TECHNOLOGY






42

NEFU conducts research in the field of molecular biotechnology in cooperation with **Pusan National University** School of Natural Sciences under the guidance of Research Professor Ismail Zulfugarov. The project is to identify stress-adaptive genes of wild plants of the North in order to obtain biologically active substances for practical application in agriculture, pharmacy and preventive medicine. NEFU won a grant in "Life Sciences (Living Systems)" in the field of "Genomic Technology" under the Federal Target Program "Scientific and Pedagogical Personnel of Innovative Russia" for 2009-2013.

MAIN PROJECTS



MOLECULAR AND GENOMIC TECHNOLOGY (2012-2014)



Identification of stress-adaptive genes of wild plants of the North and development of biologically active substances

Project Supervisors:

Professor **I.S. Zulfugarov**, Pusan National University (the Republic of Korea)

Assistant Professor **Zh.M. Okhlopkova**, PhD, NEFU Institute of Natural Sciences

- inspective sequencing of wild "dragonhead" genome was conducted at the Beijing Genomics Institute;
- dragonhead unique properties to suppress cancer cells development were revealed;
- a grant under the Federal Target Program "Scientific and Pedagogical Personnel of Innovative Russia" for 2009-2013 was won.

43

P.N. Vabishchevich, Doctor of Physical and Mathematical Sciences, Professor, Chief Researcher of the Institute for Mathematical Modelling of Russian Academy of Sciences directs project on "Development of Application Software for Computational and Theoretical Support of Solid Minerals and Hydrocarbon Crude Deposits Development". The period from 2012 to 2014 brought new scientific results, 23 articles which were published in WoS and Scopus journals, 7 textbooks and manuals, 6 master's theses on 05.13.18 program and another 2 theses are now prepared. NEFU Center of Computational Technologies regularly hosts the Research Seminar on Computational and Applied Mathematics and comprises NEFU-INTEL Competence Center for high performance computing. A new Master's program on "Computational Technologies" in "Applied Mathematics and Computer Science" was developed. According to the results of a three-year project work NEFU created the basis for globally competitive research team for solving applied mathematical modeling problems relevant to the Arctic regions and the Far North of Russia.

MAIN PROJECTS



MATHEMATICAL MODELING, SOFTWARE DEVELOPMENT (2012-2014)

Development of application software for computational and theoretical support of solid minerals and hydrocarbon crude deposits development

Project Supervisors:

P.N. Vabishchevich, Doctor of Physical and Mathematical Sciences, Professor; Chief Researcher of the Institute for Mathematical Modelling of Russian Academy of Sciences

V.I. Vasiliev, Doctor of Physical and Mathematical Sciences, Professor; Deputy Head of "Computational Technologies" Research Department

- 6 Candidate Theses on 05.13.18 program were defended
- NEFU Center of Computational Technologies regularly hosts the Research Seminar on Computational and Applied Mathematics
- Center comprises NEFU-INTEL Competence Center for high performance computing
- Master's program on "Computational Technologies" in "Applied Mathematics and Computer Science" was developed

44

In 2013, NEFU made a contract with multidisciplinary team headed by S.A. Fedorova, Doctor of Biological Sciences currently working at Yakut Scientific Center of SB RAS. The academic adviser is A.M. Olovnikov, Candidate of Biological Sciences, external researcher of Federal State Budgetary Scientific Institution "N.M. Emanuel Institute of Biochemical Physics", the author of Aging Concept (1975). The project "Histological, Cytological and Biochemical Analysis of Moonphase Activity Changes of Organs and Tissues of Animals as Components of Moonsensor System Controlling the Course of Lifetime Head Clock Activity in Development and Aging of the Organism" is to expand fundamental knowledge on the aging process, which will be obtained by verifying moonsensor theory of brain aging and the animal organism as a whole suggested by A.M. Olovnikov.

MAIN PROJECTS

BIOCHEMICAL, HISTOLOGICAL AND CYTOLOGICAL ANALYSIS OF MOONPHASE ACTIVITY CHANGES OF ORGANS AND TISSUES OF ANIMALS AS COMPONENTS OF MOONSENSOR SYSTEM (2012-2014)



Project Supervisors:

S.A. Fedorova, Doctor of Biological Sciences, Head of Molecular Biology Laboratory of NEFU Institute of Natural Sciences

A.M. Olovnikov, Candidate of Biological Sciences, external researcher of N.M. Emanuel Institute of Biochemical Physics of the Academy of Sciences



- Molecular Biology Research Laboratory was established to study genetic history of the people of North-Eastern Eurasia, sensory systems genetics, mechanisms of hormonal regulation of human aging
- two monographs and more than 30 articles were published in scientific journals, including those with impact factor according to Journal Citation Reports: Nature (37,231-38,597), Journal of Human Genetics (2,57), Acta Naturae (0,477), BMC Evolutionary Biology (3,29), PLoS ONE (3,73), International Journal of Circumpolar Health (1,299), Journal of Biological and Clinical Anthropology (0,68), Molecular Biology (0,637), Genetics (0,427), and others.
- in 2012, the abstract of study results on "endemic foci" of mutations accumulation in the gene splice site GJB2 (Sx26) in Eastern Siberia was listed in the international database of the National Center for Biotechnology Information (NCBI), USA within OMIM section (Online Mendelian Inheritance in Men)
- a unique diagnostic test system for routine DNA diagnosis of genetic deafness, which is common for Yakutia was developed (the Russian Federation patent)

45

Since 2012 NEFU together with Sooam Biotech Research Foundation has been implementing **Russian-Korean project on study and cloning of a mammoth and other fossil animals** directed by one of the world's leading researchers in the field of animal cloning and stem cell research Dr. Woo Suk Hwang. One of the last and most scientifically valuable discoveries is a mammoth carcass with unique remained soft tissues excavated from the permafrost soil by NEFU researches in May 2013 on Maly Lyakhovsky Island. As a result, the researches obtained unique biomaterial - the lower part of the mammoth carcass with a trunk and wool. The condition of remained soft tissues has no parallel in the history of paleontology. The members of the expedition has collected and brought to Yakutsk numerous bioassay samples from different parts of the mammoth remains for research. The discovered trunk is the only adult mammoth's trunk in the world, and its perfectly preserved tissue provides some prospects for successful implementation of NEFU and Sooam Foundation joint research project.

MAIN PROJECTS






Sooam Biotech
RESEARCH FOUNDATION

“MAMMOTH REVIVAL” (2012-2015)







- International Biotechnology Laboratory on cells of fossil animals was established
- NEFU scientists excavated the mammoth carcass from the permafrost soil in May 2013 on Maly Lyakhovsky Island
- the researches obtained unique biomaterial - the lower part of the mammoth carcass with a trunk and wool with unique remained soft tissues
- liquid blood of a female mammoth was found for the first time in the world; now scientists study cryoprotectant properties of blood
- bioassay samples were collected; the further research was carried out; now the possibility of cells cloning is studying
- in 2012, Russian Geographical Society had the expedition "Siberian Islands - 2012"

46

Since 2013, NEFU together with the **University of Cambridge (Scott Polar Research Institute)** (United Kingdom) has been implementing an international research project studying the culture of the peoples of the North. The project involves six scientists from Britain and it is headed by Dr. Pierce Vitebsky. The project provides complex research on cultures of the peoples of the Russian Federation North-East such as the Sakha people, Evens, Evenki, Yukagirs, Chukchi, Koryaks and Russian old-timers, including their historical experience of adaptation to extreme environmental conditions of the North and their transformation in the conditions of deepening globalization processes of the whole society. In order to study modern ethnography of northern ethnic groups the project team held 10 ethnographic field expeditions in six regions of the Sakha Republic (Yakutia), Krasnoyarsk region, Kamchatka region and Chukotka Autonomous District. Research data on linguistic diversity, cultural space changes, ethnic and cultural identity of indigenous peoples of the North was collected.

MAIN PROJECTS






**UNIVERSITY OF
CAMBRIDGE**

“STUDIES OF CULTURES OF THE PEOPLES OF THE NORTH”
in association with University of Cambridge
Scott Polar Research Institute
(2013-2015)



Project Supervisors:
A.A. Alekseev, Candidate of Historical Sciences, Associate Professor of NEFU Faculty of History
Pierce Vitebsky, Doctor, Deputy Director of Scott Polar Research Institute (University of Cambridge)

The project team held 10 ethnographic field expeditions in 6 districts of the Sakha Republic (Yakutia) and Essey village of Krasnoyarsk region with undergraduate and graduate students. During the expeditions research data on linguistic diversity, cultural space changes, ethnic and cultural identity of indigenous peoples of the North was collected.





The discussion of cooperation prospects with **Leshek Boryshevich**, the University of Cambridge rector

47

In partnership with **Hokkaido University** (Japan) M.K. Ammosov North-Eastern Federal University (NEFU) implements **a large-scale research project in the field of global climate change**. In collaboration with the Institute of Biological Problems of Cryolithozone, Siberian Branch of the Russian Academy of Sciences, a number of international projects with the European Union (14 countries) and Japan, NEFU has established **a global network SakhaFluxNet on monitoring climatic and biogeochemical changes** in the North-East of Russia. It is noteworthy that SakhaFluxNet monitoring network created by NEFU researchers is ahead of many regions of Russia by number of unique research stations and volume of parameters studied and has no analogues in the country. The network of research stations covers the most important bioclimatic permafrost zones- tundra, forest-tundra and forest; the network is equipped with modern high-tech research, communication and computer equipment. Each station provides research staff with comfortable conditions for work and residence. In 2013 in the framework of «GRENETEА» Japanese research project there was established a research station «Kodac» in Kodakchan area located in the forest-tundra zone of Allaikhovsky region in the Sakha Republic (Yakutia).

In the same year an international summer field school «Taiga forest ecosystem on permafrost – Role of permafrost zone in a global change» was conducted on the basis of Spasskaya Pad forest research station. The summer school was funded by international educational project IFES-GCOE (Japan). Professors invited from Japan organized an international course on Biogeochemistry for NEFU undergraduate and graduate students. Besides, based on Hokkaido University there were held short courses on isotope analysis, workshops and lectures for high school students of the Sakha Republic (Yakutia).

MAIN PROJECTS



FLUXNET

BIOGEOCHEMICAL CYCLES OF PERMAFROST ECOSYSTEMS UNDER CLIMATE CHANGES (since 2011)





Biogeoscience Educational & Scientific Trainings




- Establishment of **International educational and scientific center "BEST"** aimed at study of interaction between global climate changes and carbon cycle, water, energy and biogenic elements in northern ecosystems on permafrost.
- Creation of **SakhaFluxNet** global network which includes 6 research stations
- Organization of annual international summer field school **"Taiga forest ecosystem on permafrost- Role of permafrost zone in a global change"**
- Holding international courses on biogeochemistry for NEFU undergraduate and graduate students, short-term courses on isotope study on the basis of **Hokkaido University**, workshops and lectures for high-school students of the Sakha Republic (Yakutia)

48

In 2014 under the auspices of the government of Japan a research-educational project on Master's program **Re-Inventing Japan Project** was launched for a period of 2014-2018. The project partner institutions are Hokkaido University and five universities in the Far East of Russia (NEFU, Far Eastern Federal University, Irkutsk State University, Pacific National University, Sakhalin State University). The project will realize student and staff academic mobility program: annually five students from NEFU and Hokkaido University are planned to participate in the exchange program and study at a partner university. It is notable that the Government of Japan will fund the exchange program covering transportation and accommodation costs.

**NEFU is academic, innovation and research center for the Arctic regions
situated on permafrost**

**(52% of the territory of Yakutia, 100% of the territory of Chukotka Autonomous Okrug – the
Arctic area of the Russian Federation, Magadan Oblast)**

**NEFU
projects:**

- Study of biogeochemical cycles in northern ecosystems (Institute of Natural Sciences, International educational and scientific center "BEST" in collaboration with the Institute of Biological Problems of Cryolite Zone, Siberian Branch of the Russian Academy of Sciences, University of Hokkaido etc.)
- Innovative drilling technologies under condition of permafrost applied in building and road construction, mining (Faculty of Mining and Survey, Small innovative enterprise "Arctic Bour")
- Monitoring of ecological state of frozen soils and their transformation under human impact, biological re-cultivation of derelict land (Research Institute of Applied Ecology in the North)
- Research and Development in the field of soil stabilization, rock mechanics, geophysics, geotechnology, issues of mining companies projecting under condition of cryolite zone (Institute of Mining, Research educational center "Geotechnologies in the North" of NEFU Arctic Innovation Center; Institute of Mining in the North of the Siberian Branch, Russian Academy of Sciences)
- Technologies of construction material production, construction and building operation technologies under permafrost condition (Institute of Engineering, "Stroykompozit" small innovative enterprise, Adgezia MK small innovative enterprise and others)
- "Cryopedometer at schools" project (Department of Northern Studies in collaboration with University of Alaska Fairbanks, USA)
- Introduction of energy efficient technologies in production works, housing and utilities sector in the North etc. (Institute of Engineering, Institute of Physics and Engineering, small innovative enterprises)

50

**СВФУ – center of scientific, educational and innovative activities in the field of
rational use of nature, resource development and environmental protection**

**NEFU
projects:**

- Studies in the field of geomodelling, forecasting technologies, survey and development of mineral deposits (Faculty of Mining and Survey)
- Development of new drilling string model for exploration and mining of placer deposits under condition of permafrost (Faculty of Mining and Survey, joint work with "Almazyn Anabara" joint stock company)
- Research and development in the field of extraction and processing of commercial minerals under permafrost condition (Institute of Mining, Institute of Physics and Engineering, NEFU Arctic Innovation Center)
- Introduction of research results in oil and gas industry in north-east of Russia (based on agreements concluded with "Gazprom" joint stock company, "Surgutneftegaz" joint stock company, "YATEK" joint stock company, "Sakhatransneftegaz" joint stock company, "Sakhatransneftegazsbyt" joint stock company)
- Technologies of risk reduction and decrease of environmental and technogenic disasters (Research Institute of Applied Ecology in the North)
- Field studies on monitoring and assessment of human impact on natural ecosystems in north-east of Russia. Development of methods of rapid recovery of derelict land and introduction of recommendations on rational nature management of northern territories (Institute of Natural Sciences)
- Study of northern territories development through supercomputer technologies of mathematical modeling (Institute of Mathematics and Information Sciences) and etc.

51

Для проведения научно-исследовательской и инновационно-внедренческой деятельности СВФУ обладает серьезным интеллектуальным потенциалом:



In order to encourage student research activity **394 students' scientific clubs** have been created at NEFU involving 4382 students. Students' scientific clubs prepare students for future research works encouraging students for further graduate education. Every year **more than 75% graduate students become members of students' scientific clubs at NEFU**. There are a number of scientific- experimental and innovative platforms for undergraduate and graduate students: student design center, "Radio electronics" student design bureau, center of youth creativity «FabLab», interuniversity student business incubator. In order to develop student research activity, promote an integration of science and education, involve academic staff in student research works and further scientific clubs at NEFU there has been created NEFU Council of Young Scientists (25 students) and Student Scientific Society established in 2013 (more than 600 students).

Special attention is paid to **students' involvement in funded research**. It is notable that the number of students taking part in funded research projects in

collaboration with academic staff of the University is growing. Thus, total number of students involved in research projects carried out within a state task of the Ministry of Education and Science of the Russian Federation, federal targeted programs, Russian Foundation for the Humanities, Russian Foundation of Fundamental Research, the Sakha Republic (Yakutia) state task, commercial contracts makes 340 people.

In the framework of federal universities networking cooperation and a Year of Science at NEFU on September 15-19, 2014 North-Eastern Federal University hosted **the Forum of Young Scientists of Federal Universities**. The main goal of the Forum was partnership of federal universities in the field of promotion of youth science and involvement of talented youth in science.

RESEARCH ACTIVITY OF UNDERGRADUATE AND GRADUATE STUDENTS

- **394 student scientific clubs** involving **4382 NEFU students**
- Scientific- experimental and innovative platforms for undergraduate and graduate students:
 - student design center
 - Radio Electronics student design bureau
 - FabLab center of youth creative work
 - OREKH interuniversity student business incubator
- **NEFU Council of Young Scientists** (25 pers.)
- **Student Scientific Society** established in 2013 (more than 600 students).
- On September 15-19, 2014 NEFU hosted **First Forum of young scientists of federal universities**



53

RESEARCH ACTIVITY OF UNDERGRADUATE AND GRADUATE STUDENTS

- 2012 – Ninel Malysheva (Institute of languages and cultures, NEFU) became a winner of Lomonosov-2012 International Research conference for students and young scientists
- 2014 – NEFU students became winners at "Lomonosov-2014" International Research conference for students and young scientists in 12 conference sections out of 34. 3 students were awarded the Third Prize, presentations of 2 students were recommended for publication in the collection of the best papers. Moreover, in 2014 Svetlana Ivanova (Institute of Natural Sciences) became a winner in "Chemistry" section and was awarded MSU Rector's certificate of merit
- NEFU students are winners of President of the Russian Federation scholarship (8 students) and the Russian Federation Government scholarship (5 students)
- 2010 – 147 NEFU students became winners in "The best student research work in Natural, Engineering and Human Sciences" Russian Research Contest among Russian and CIS universities (20 students were awarded medals, 127 students received certificates of the Ministry of Education and Science, Russian Federation)
- 2011 - a student from the Institute of Finance and Economics became a winner of the "Business Eurasia-standards of Future" contest of applied research projects of the Eurasian Youth Economic Forum (Ekaterinburg)
- In 2012 and 2013 30 students were awarded "UMNIK" research innovation contest certificates
- 2014 – 2 students became winners of the First prize and 1 student – the Second prize in the "Own Business" development projects contest within Russian Research School "Ecology and sustainable development of territories" for federal university students
- 2014 – 2 students became winners in the "Understanding the Arctic" Research Projects Contest
- 2014 – 3 NEFU students won "The best student research work" prize among students of federal universities

54

In 2010-2012 NEFU implemented a project under the Government Resolution №219 dated April 9, 2010 "On state support of innovation infrastructure at federal educational institutions of higher professional education." According to the results of an open competition coordinated by the Ministry of Education and Science of the Russian Federation, NEFU received a grant of 85,776,000 rubles for implementation of the project **"Development of innovative infrastructure in NEFU- Creation of the Arctic Innovation Center"** in 2010-2012.

VI. NEW ACTIVITIES OF NEFU IN THE SPHERE OF KNOWLEDGE AND TECHNOLOGY TRANSFER

UNIVERSITY IS A CENTER OF INNOVATION

"OREH" INTER-UNIVERSITY STUDENT BUSINESS INCUBATOR

- Support of the "UMNIK" program of the Foundation for Small enterprises support
- "School of Innovators" educational project
- "FabLab" Center of youth creative activity
- Co-working environment for students engaged in business

DEVELOPMENT OF SMALL INNOVATIVE ENTERPRISES

- Equipment and premises lease in accordance with the Ministry of Education and Science, Russian Federation
- Educational, legal support and consultation
- Grant search
- Production marketing
- Development and implementation of business plans for small innovative enterprises



CENTER FOR COLLECTIVE USE

- Research estate
- Microscopy, analyses, measurement, prototyping



2010 –
ARCTIC
INNOVATION
CENTER



CENTER FOR INTELLECTUAL PROPERTY

- Center for Technology and Innovation Support "WIPO" Rospatent
- Library of Patent Information Resources
- Sector for legal protection of intellectual property
- Sector on technology transfer



CENTER FOR COMMERCIALIZATION OF INTELLECTUAL PROPERTY ITEMS

- Search for perspective results of intellectual activity
- Creation of small innovative enterprises and NEFU NMA management
- Investment consulting and fundraising
- Development and implementation of marketing strategy for promotion innovation-business services in Russia and the World



COOPERATION WITH ENTERPRISES

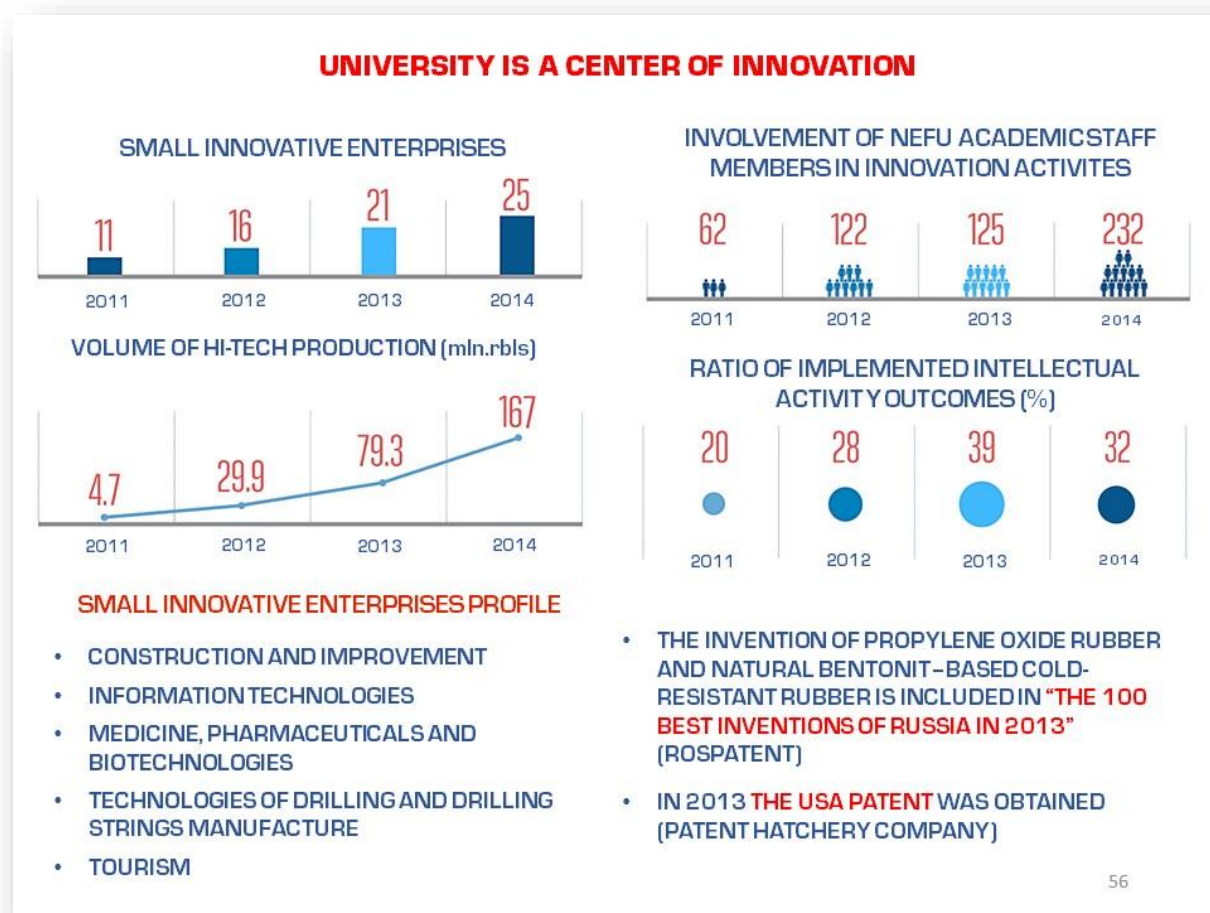
- Support of technological platforms
- Development of engineering activity
- Regional construction cluster
- Integrated projects and programs

55

In the period of 2010 -2014 an innovative infrastructure of NEFU has been significantly developed. Thus, there was established the Arctic Innovation Center, a multidisciplinary scientific and innovative educational complex. It comprises a Center of Intellectual Property, which provides business companies and inventors with free access to patent and non-patent resources of the Federal Institute of Industrial Property (FIPS) of Rospatent. Besides, it conducts active advisory and educational activities for research, educational and industrial organizations and innovative entrepreneurship on intellectual property management issues. A Center of collective use and inter-university student business incubator "Orekh" (Nut) have been successfully operating providing support for start-ups.

The University has **161 intellectual property items** (IPI) in the form of intangible assets including 62 patents, 17 computer programs, 13 databases and 66 production secrets ("know-how"). In the period of 2011 to 2014 52 IPI were commercialized including 48 know-how, 3 patents and 1 computer program. NEFU applied for protection of intellectual property in collaboration with ALROSA joint-stock company, Almazy Anabara joint-stock company, Institute of Mining of Siberian

Branch of RAS, Institute of Oil and Gas issues, SB RAS, Institute of Mining, Ural Branch of the Russian Academy of Sciences, and others.



Original engineering developments are made in different fields of industry – mining and equipment, construction and technology of building materials, energy and power including alternative energy sources, polymer materials science, measuring tools, etc.

NEFU inventions obtain high expert evaluations at international exhibitions on innovation technologies.

In collaboration with the Institute of Oil and Gas Issues, SB RAS, NEFU has developed a propylene oxide rubber and natural bentonites-based cold-resistant rubber. The project was among **the 100 best inventions of Russia in 2013**.

It is notable that an inventive activity has been observed to increase: in comparison with 2012, application for legal protection of research results has made 73%, granting of titles of protection has grown by 26%.

An average performance of NEFU patents introduction in the economy in the period of 2010-2013 made 37%. In general, the ratio of all implemented results of intellectual activity in 2014 was 32%. In 2013 intellectual property management profit

(including implementation of licensing agreements, patents, etc.) reached 3.1 million rubles.

The infrastructure established in NEFU for human resources and academic information support, as well as the results in the field of intellectual property indicate a significant role of the University in the development of science and innovations in the region. In the recent years, the Sakha Republic (Yakutia) has witnessed the rise in the inventive activity (by an average of 50-60%) and the efficiency of patent services in research institutes and industrial enterprises; the establishment of new centers for intellectual property, the Support Center for Technology and Innovation (TISC) providing substantial assistance to entrepreneurs and individual developers; provision of the free access to databases of patent and non-patent information. NEFU accounts for some 25% of the documents of title of the Sakha Republic (Yakutia), in addition, every year, the University files approximately one third of all applications in the region for the legal protection of intellectual property.

Since 2010, using the results of scientific and technical activities, NEFU has created **25 small innovative enterprises (SIE)** in the field of information technology, medicine and biotechnology, energy-efficient construction and infrastructure improvement in conditions of the North, which produced innovative products for 281 million rubles.

SIE "Stroykompozit" implemented a pilot project on **the construction of energy efficient residential buildings** in the village of Appany in Namskiy region of Yakutia. The government of the Sakha Republic (Yakutia) has appreciated the technology of light steel structures production designed by **SIE "Adgeziya MK"**. Due to the results of the small innovative enterprises, NEFU was entrusted to provide the technological support to the construction cluster with the aim of building energy efficient pilot residential areas under the president of the Sakha Republic (Yakutia) order of on July 17, 2013 № 812-AI.

SMALL INNOVATIVE ENTERPRISES



SIE
"STROYKOMPOZIT"



The commissioning of an
energy efficiency residential
buildings in Appany village of
Nam region of Yakutia



SIE
«MECHANOCHEMICAL
BIOTECHNOLOGIES»



SIE «ECOUPAKOVKA»



SIE «ADHESION MK»



SIE «TEPLOKOMFORT»



SIE «GENODIAGNOSTIC»



SIE «VITA-
HYDROPONICS»



SIE «ARCTIC BOUR»



SIE «PERSPECTIVE»



SIE «YAKUTIA GIFTS»



SIE «INDORSTROY»

57

The grant of the president of the Sakha Republic (Yakutia) for innovative projects in priority areas of scientific, technological and innovation activities support in the Sakha Republic (Yakutia) has been awarded to **LLC "Genodiagnostika"** (Development of test systems for use in the laboratory diagnosis of hereditary diseases), **LLC "Mnogomernyeologii"** (Creation of composite information resources based on virtual replicas of physical objects), **LLC "Mechanochemicheskieologii"** (Development and production of pharmaceuticals, multicomponent bio-pharmaceuticals for the correction of metabolic abnormalities in type 2 diabetes).

The **Nanotechnology Research and Education Center** conducts research on graphene nanotechnologies, polymer composite materials and mechanochemical biotechnology. The **Technology of Polymer Nanocomposites Laboratory** provides the promotion of proprietary polymers and elastomers in JSC "Yakutskenergo" and ALROSA Company. The research conducted in conjunction with leading Korean scientists in this field will allow to find a way to get the low-temperature oil in the future, which can be a real breakthrough for the global automotive market. The **SIE "Graphen"** that produces microelectronic products based on graphene has been

founded in cooperation with the company ZAO "NT-MDT". Biopharmaceuticals of the **Mechanochemical Biotechnologies Laboratory** based on lichen was awarded with gold medals of the Bioindustry Exhibition held in the St. Petersburg within the frame of the International Health Forum and the International Exhibition RosBioTech (Moscow); the method of obtaining sorption material of the thalli lichen was awarded with a silver medal of the 9th International Innovation Fair - SIIF 2013.

Development of higher education in the Russian Far East and the Baikal region is associated with the creation of large academic and educational centers that can provide a breakthrough in innovative technologies. Training the in-demand staff is one of the main objectives of the modernization of higher education. The main aim of the universities is to provide a qualitative breakthrough in the regional economy.

The main factors that negatively affect the quality of education are as follows: a vast area of the Russian Northeast, low accessibility, economic and infrastructural isolation from the rest of Russia, remoteness from major academic, educational and socio-cultural centers in the country, and the small number of settlements. In this regard, the University is working on the implementation of e-learning and distance education technologies to provide high quality education for young people, regardless of where they live. For this purpose, it was decided to create **the Yakut Global University**. The project has just started to be implemented, but from 2010 to 2014 the foundation of the information and telecommunication systems, to support education, research and administrative tasks was laid.

More than 4,000 computers and office equipment was acquired from 2010 to 2014, all academic buildings and dormitories are equipped with wireless Internet access, the classrooms and computer labs are equipped with 90 interactive whiteboards and 187 multimedia projectors. Free access is available to 45 electronic databases.

ELECTRONIC UNIVERSITY

Development of the concept of creation and development of information and telecommunication systems, for education, research and administrative tasks support

More than 4000 computers and office equipment purchased from 2010 to 2014, all academic buildings and dormitories are equipped with Wi-Fi access, classrooms and computer labs equipped with 90 interactive whiteboards and 187 multimedia projectors.

Access to Russian and foreign electronic educational resources (20 - Russian, 25 - foreign)

Distributed corporate network (2011)

Lectures with the use of video conference connection (since 2011)

The "Digital Campus" (2012)

Center for Applied Computational Technologies (2011)

Supercomputer "Arian Kuzmin" (2011, ranked in the top 30 most powerful supercomputers in the CIS)

Museum of Industry and the development of the productive forces of the Russian Far East (2013)

Yakut Global University (2014)

The creation of a university television station together with two South Korean companies (Stagenet, Samhwa) (2014)

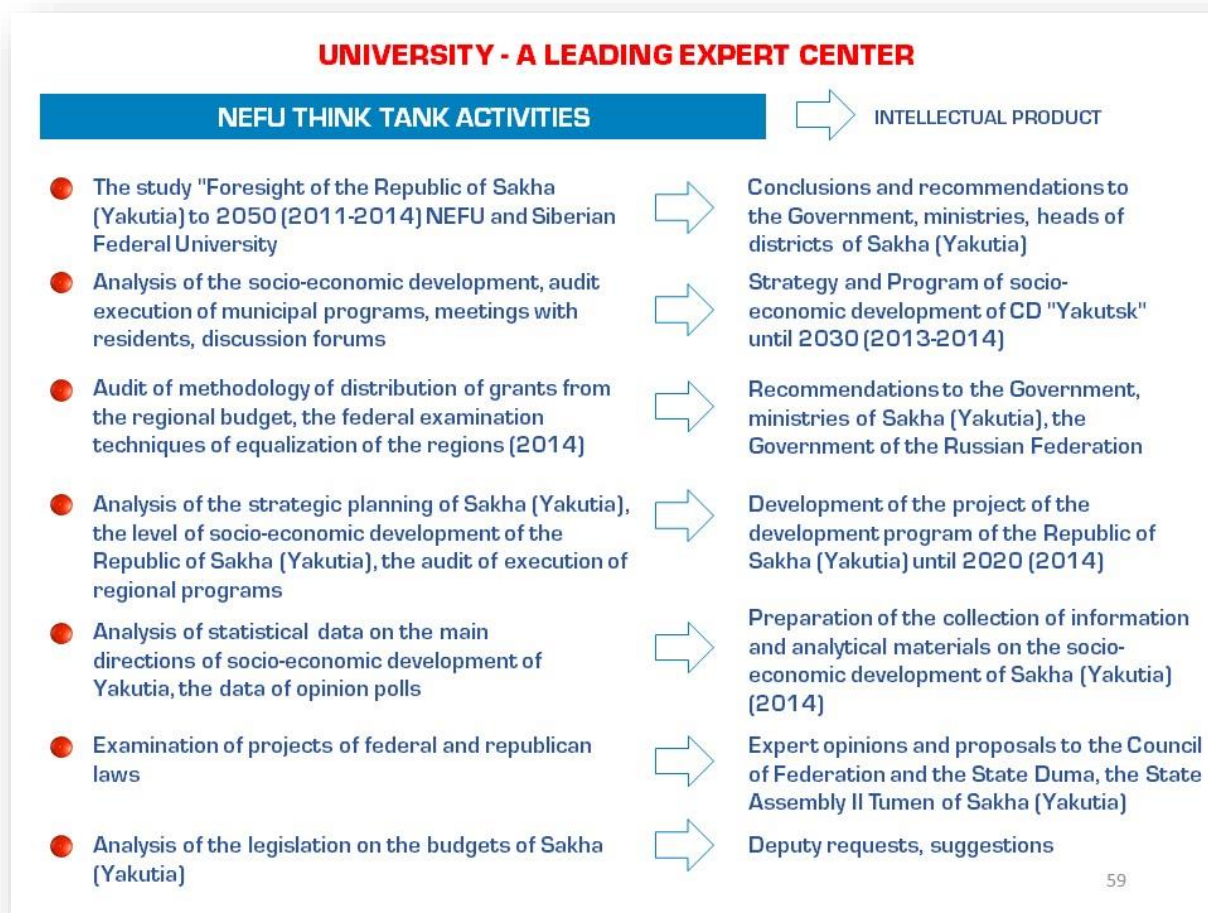
58

Since 2011, lectures have been being held using videoconference connection, a web department has been created on the basis of the Institute of Continuing Professional Education, where the best educational practices of the country and the world and the Russian teachers professional experience have been collected. The Center of Applied Computing Technology, equipped with one of the most powerful supercomputers in the CIS, was created in 2011. A project on building a university television station together with two South Korean companies (Stagenet and Samhwa) has been being implemented since 2014.

NEFU is developing as **the leading think tank** in the Russian Northeast, organically combining education, research and practice-oriented expert-analytical and forecasting activities in the following areas:

- The mechanisms and strategies for the development and preservation of the languages and culture of the peoples of the North development;
- The study of the major trends and priorities of socio-economic development of the Russian Northeast;
- Linguistic and legal expertise of legal acts;

- Environmental impact assessment of projects implemented in the permafrost zone; and
- Climatological studies, studies of human health problems in the North and others.



NEFU together with the Siberian Federal University conducted **foresight study on the development of the Republic of Sakha (Yakutia) till 2050**, including a set of research and design work to identify possible options for the future of the republic.

Today NEFU also acts as an **Institute of Urban and Regional Development**. One of the future tasks is to analyze the socio-economic trends and potential growth markets, medium and long term forecasting of regional development. **The strategy for Socio-Economic Development of the city of Yakutsk** for the period up to 2030 has been developed by us at the initiative of the mayor Aysen Nikolaev. The project is focused on the sustainable development of the city of Yakutsk, achieving a balance between nature, society, economy and social sphere in order to improve the quality of life of the population. In 2014, the University staff worked on the program of social and economic development of the city of Yakutsk.

UNIVERSITY - A LEADING EXPERT CENTER

EXPERTS CENTERS OF THE NEFU founded in the period from 2011 to 2014

- CENTRE FOR LEGAL RESEARCH AND SUSTAINABLE DEVELOPMENT OF THE ARCTIC AND INDIGENOUS PEOPLES OF THE NORTH (Faculty of Law, Department of UNESCO)
- CENTER FOR PUBLIC LAW (Faculty of Law, Constitutional Court of Sakha (Yakutia))
- CENTER OF LINGUISTIC EXPERTISE (Faculty of Philology, Institute of Languages and cultures of the peoples of the North-East of the Russian Federation)
- TESTING CENTER "YAKUTSK-EXPERT" by 5 kinds of tests (Engineering Institute)
- LABORATORY OF ENVIRONMENTAL IMPACT ASSESSMENT, PHYSICAL AND CHEMICAL ANALYSIS METHODS
- INFORMATION-ANALYTICAL CENTER "EXPERT"
- INTERNATIONAL RESEARCH AND EDUCATION CENTER "BEST" - 6 scientific climate stations (Institute of Natural Sciences)
- LABORATORY OF GENOMIC MEDICINE – study of hereditary diseases (Medical institute)
- LEADING MINING AND EXPLORATION CENTER, a joint teaching and research and production drilling ground with "Gazprom" – Gazpromsentr (Faculty of Geological Exploration)

60

A Centre for Legal Research and sustainable development of the Arctic and Indigenous Peoples of the North to become a leading expert on sustainable development, environmental legislation is working at the NEFU. A Center of public law is functioning at the Faculty of Law. The main direction of research is related to the establishment of the constitutionalization process of the state order and legislation, the rule of real Constitution and other founding documents. The Center staff actively participated in the development of the comments to the Constitution of the Sakha Republic (Yakutia), and is an expert at public hearings on amendments to the statutes of municipalities.

The Center of Linguistic Expertise has been working at the Faculty of Philology since 2010. About 100 linguistic expertise in the identification in printed texts of various sources of elements containing insults and illegal calls to various structures, law enforcement, according to the needs of citizens have been held within three years. The activity of the Center is highly appreciated by the customers.

The Testing Center of Engineering of the Technical Institute "Yakutsk-EXPERT" was accredited in the certification system of AUSS of the Russian Federation in 2013. It conducts laboratory tests and certification of building materials,

products and designs: furniture, articles of wood, plywood products, lumber, blanks, joinery, wall materials; cement materials, mixtures of concrete, mortar, construction, heat-insulating materials and products, etc. The Testing Center concluded 20 long-term contracts with construction companies to conduct product testing. The Testing Center is to become a leading center in the region for testing of building materials, products and designs in the future. The expected scope of work and services of the Center is estimated at 4.2 million rubles per year with the prospect of annual growth of 8-12%.

The staff of **the Research Institute of Applied Ecology of the North** NEFU (RIAEN NEFU) is involved for environmental assessment under the RPN for the Sakha Republic (Yakutia) and the Russian Geographical Society in:

- Mining technologies;
- Reclamation of land disturbed and contaminated by spills of the pipeline "Eastern Siberia - Pacific Ocean";
- Expansion of quarries, landfills (ALROSA, Yakutugol), the placement of solid domestic and industrial waste (Lensk, Neryungri);
- Facilities at Talakan, Alin, and Srednebotuobinskoye oil and gas fields.

The Laboratory of Physico-chemical Methods of Analysis of RIAEN NEFU is accredited by the Federal Agency for Technical Regulation and Metrology, which allows to act as a third party in the arbitration and litigation, to act as experts in matters of opinion. The laboratory carries out chemical analytical services for various companies in terms of product certification.

An important direction of development of the university is **the preservation and development of the languages and culture of the North**, which includes not only educational, research, but also educational activities in the field of history and culture, a multilingual multicultural education, social engineering and cultural policy. A draft implementation of scientific and educational information system for the preservation and dissemination of the Yakut heroic epic Olonkho, recognized by UNESCO in 2005 as a Masterpiece of the Oral and Intangible Heritage of not only Yakutia, but of all mankind has a special significance for the republic in the field of humanities and academic innovations of NEFU.

VII. UNIVERSITY IS A CENTER OF CULTURE, SPORT AND COOPERATION

Providing resources for contribution to the world cultural heritage

- "MULTILINGUALISM IN CYBERSPACE" CENTER under the covenant of UNESCO
- LABORATORY OF EMPIRICAL PHILOLOGY OF N.N. DIACHKOVSKY
- LITERATURE MUSEUM initiated by the First President of the Sakha Republic (Yakutia), M. E. Nikolayev
- CENTER FOR CULTURAL STUDIES
- SCIENTIFIC RESEARCH INSTITUTE OF OLONKHO
- SCIENTIFIC RESEARCH INSTITUTE OF ALEKSANDER KULAKOVSKY – founder of Sakha literature
- INTERNATIONAL UNESCO CHAIR at M.K. Ammosov North-Eastern Federal University "Social and Human Adaptation of the Arctic Regions to Climate Change"

"LANGUAGE AND CULTURAL DIVERSITY IN CYBERSPACE" International Conference
(collaborative project of the Russian Ministry of Culture and "Information for all" UNESCO Program)

Participants – international specialists from all continents and complementary sciences

2008 – 15 countries
2011 – 29 countries
2014 – 48 countries



"Conferences held at the North-Eastern Federal University served as a start for world-class recognized experts in the field of language and cultural diversity in cyberspace."

*Getachew Engida,
Deputy Director-General of UNESCO*

61

The Academic Research Institute of Olonkho collaborates with academic and research institutes of the Republic of Altai, Republic of Tyva, Republic of Khakassia, Buryat Republic and Mongolia in field of nation's epic heritage studies.

Collaborative project with the Kyrgyz Republic on translation of the Yakut olonkho "Nurgun Botur the Swift" by Platon Oyunsky into the Kyrgyz language and Kyrgyz epos "Manas" into the Sakha language has been completed.

Also, **olonkho "Nurgun Botur the Swift" has been translated into the English language** by NEFU academic staff and has been published at the RenaissanceBook British publishing house.

STUDYING AND PROMOTING OF EPIC HERITAGE



Scientific and Research Institute of Olonkho

- Heroic epos declared in 2005 by UNESCO as a **masterpiece of the oral and intangible heritage of the humanity**
- Collaboration with academic scientific and research institutes of the Republic of Altai, Republic of Tyva, Republic of Khakassia, Buryat Republic and Mongolia in field of **nation's epic heritage studies**.
- Translation of the Yakut olonkho "**The Swift Nyurgun Bootur**" by Platon Oyuunsky into Kyrgyz and Kyrgyz epos "**Manas**" into Yakut language
- Translation of the "The Swifted Nyurgun Bootur" olonkho into English language and publishing at the RenaissanceBook (London), and book collection development of European universities libraries (400 universities)
- International scientific conference "**Yakut Heroic Epos Olonkho – Masterpiece of Intangible Heritage of the Humanity in the Context of World Nation's Epos**", June 18-20, 2013, Yakutsk (159 participants from 14 countries and 14 regions of Russian Federation)
- "Olonkho" informational system establishment, multilingual portal, TV-channel, database for preservation and spreading of yakut epic heritage
- Within a few short years, SRI Olonkho was recognized by specialists of epic poetry as a center of spreading universal and humanistic values of epic heritage, scientific understanding of universal nature of yakut epos nature in the context of world culture.

62

NEFU is a base for the Institute of Languages and Cultures of Peoples of the North-East of the Russian Federation, the Institute of Alexey Kulakovsky – one of the founders of the Yakut literature, the International UNESCO Chair, the Linguistic and Cultural Diversity in Cyberspace international center, the Laboratory of Empirical Philology of N.N. Diachkovsky, the Literature Museum, the Center for Culturological Studies, and a number of scientific and academic centers and laboratories.

In cooperation with the Ministry of Culture of the Russian Federation, the Russian Committee of UNESCO Program "Information for All", the Interregional Center for Library Cooperation, the Federal Agency for Press and Mass Communications, the Russian Federation Committee for UNESCO and the UNESCO, as well as support from the Government of the Sakha Republic (Yakutia), NEFU held the II and III International Conferences on "Linguistic and Cultural Diversity in Cyberspace" in 2011 and 2014. These conferences resulted in several documents: the Lena Resolution (2008), the Yakut Address (2011), The Yakut Declaration on Linguistic and Cultural Diversity in Cyberspace (2014), which received global recognition and are referred to in writings of researchers and official

documents. They have become a valuable contribution in strengthening and further development of the international practice in political issues, problems of standards and options for preservation and development of the linguistic and cultural diversity in cyberspace.

NEFU has a long and fruitful cooperation with universities of South Korea, Japan, China, the USA, Canada, Finland, Sweden, Norway, Iceland, Great Britain, Germany, France, Poland, Switzerland, Turkey, countries of the former Soviet Union and others (more than 140 foreign partners: higher education institutions, research and scientific centers, etc.). In 2013, the geography of staff-members' business-trips abroad has been widened to 26 countries.

UNIVERSITY IS THE CENTER OF INTERNATIONAL COOPERATION

NEFU collaborates with more than **140** universities and scientific institutes worldwide

4 JOINT EDUCATIONAL PROGRAMS
(double-degree programs)

with universities of China (linguistics) and France (philology, economics)

7 more joint educational programs are in the process of development

Canada (Faculty of Law, UNESCO Chair) Slovakia (Institute of Engineering and Technologies)
Norway, Czech Republic (Institute of Natural Sciences) France (Institute of Foreign Philology and Regional Studies, Institute of Environmental Studies) etc.

11 JOINT RESEARCH AND SCIENTIFIC PROJECTS

- 2 projects with Cambridge University (Great Britain)
- 2 projects with Pusan National University (South Korea)
- Myongji University (South Korea)
- Soom Research Foundation (South Korea)
- University of Michigan (USA)
- Hokkaido University (Japan)
- "Bridgestone" Corporation
- University of Toulouse (France)
- Alfred Wegener Institute for Polar and Marine Research (Germany)



63

The North-Eastern Federal University is engaged in two projects of the International Erasmus Mundus Mobility Network, within the European Commission grant for participation in IAMONET international project realization “Academic Network of Mobility with Russia”, and within AURORA project – “Towards Modern and Innovative Higher Education”.

INTERNATIONALIZATION DEVELOPMENT AT THE NORTH-EASTERN FEDERAL UNIVERSITY

Goal: training of specialists with leadership abilities
applicable to ecology, culture and development issues in
regions of the Far East and Arctic as well



R.Scott Polar Research Institute,
University of Cambridge

North-Eastern Federal University and
University of Cambridge grant
[2013-2015]



Hokkaido University
(Japan)

Grant of the Government of Japan
[2014-2016]



Myongji University (South Korea)

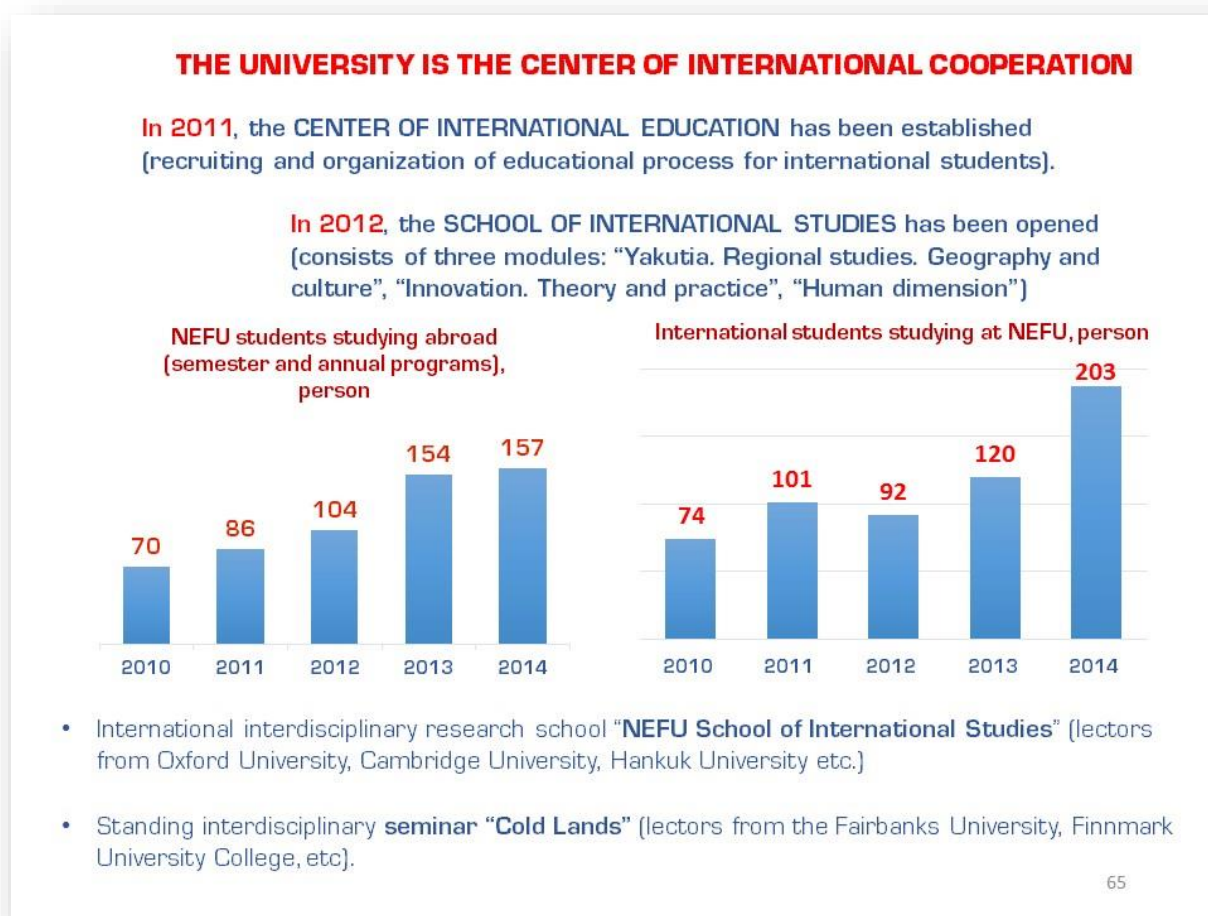
North-Eastern Federal University and
Korean Institute of Science and
Technology grant
[2013-2015]

64

Thanks to the Endowment Fund, for the first time, NEFU established the **Academic Mobility**, a scholarship program of academic mobility of students and postgraduate students. The Program supports talented students and promotes academic mobility with partner universities abroad, develops academic and research activities of students and postgraduate students within internships at leading international higher education institutions.

In the year 2014, **157 students of North-Eastern Federal University participated in such academic mobility programs** as North2North of the University of Arctic; High North, the Russian Federation President scholarship for studies at international higher education institutions; scholarship programs of the partner University of Hokkaido (Japan): HUSTEP – the scholarship of Japanese student organization and Japanese Language (JASSO) and Culture Studies Program (JLCS); Summer in Germany competition under NEFU Development Program. Besides all these, NEFU students took part in English language learning programs EF Education, Q-language language school (Hong-Kong, China), and were involved in international forums and congresses activities, as the London International Youth Science Forum on the NEFU Endowment Fund account and student mobility programs with partner-

universities in South Korea, China and Japan continue. In 2013, around 60 NEFU students completed studying at higher education institutions of the Asian-Pacific countries.



NEFU conducts extensive research in collaboration with 52 international universities and research institutes. In 2014, **203 international students from 30 countries** from all over the world studied at NEFU within various educational programs. The geography of countries of NEFU international students is widening. For the first time ever citizens of Mongolia, Peru, Indonesia, Afghanistan and other countries entered the University.

Cooperation with the Asian-Pacific countries is one of the priority directions of NEFU international partnership. The main partners are: the Hankuk University of Foreign Studies, Pusan National University, University of Hokkaido, Bridgestone Corporation, Dalian Technology University, Myongji University, Korean Institute of Science and Technology and others.

NEFU is **a member of international organizations** such as the University of the Arctic, the Club of the Rectors of Europe, non-governmental organization

“Association of Teachers of English Language Yakut-TESOL”, non-commercial partnership “Russian International Affairs Council”.

NEFU was one of the initiators of establishing **the University of the Arctic**, uniting research and educational potential of universities of the global Arctic zone. The active position of NEFU within University of Arctic activities, including 170 more than 170 universities and scientific and research centers, is an important strategic step on the way to strengthening NEFU positions as international center for Arctic research.

**NEFU AND UNIVERSITY OF ARCTIC**

International network University of Arctic includes 175 members (universities, colleges, research centers). 8 countries of Arctic Council and 7 non-Arctic countries

NEFU PARTICIPATION IN THEMATIC NETWORKS OF UNIVERSITY OF ARCTIC

NEFU is a lead of such networks as:

- Local and Regional Development of North**
(University of St. Mary, University of Alaska, University of Northern British Columbia, Arctic University of Norway, Syktyvkar State University, Northern Arctic Federal University)
- World Images of Indigenous Peoples of the North**
Institute of Linguistics of Russian Academy of Sciences, Lomonosov Moscow State University, Herzen Russian State Pedagogical University, Institute of the Humanities and the Indigenous Peoples of the North - Siberian Branch RAS, Université de Versailles Saint-Quentin-en-Yvelines (UVSQ))

NEFU is among organizers of such networks as:

- Arctic Extractive Industries
(University of Lapland, Memorial University of Newfoundland, University of Greenland, University of Oulu, University of Tromsø, NEFU)
- Arctic Geology
- Verdde Program
- Northern Governance
- Permafrost
- Arctic Law
- Environmental Impact Assessment of Industry Contaminated Areas
- Natural Hazards

INTERNATIONAL PROMOTION OF RUSSIAN LANGUAGE

Cooperation with Russian Language Departments of foreign universities

South Korea



Chosun
University



Hankuk University of
International Studies



Daegu University



Pusan
National
University



Hallym University

China



Heilongjiang
University



Cicikar University



Linyi
University



Changchun University
of Science and Technology



Harbin University of
Science and Technologies

Japan



Sapporo
University

Mongolia



Mongolian
University of
Science and
Technologies

Austria



Innsbruck
University



In 2012, establishment of **Russian Language as Foreign** department within the Faculty of Philology

Students from South Korea, China, Peru, Vietnam, Guyana and others study there

- Russian Language Educational Center (for foreign workers, migrants);
- Branch of International Testing Center for Foreign Citizens.



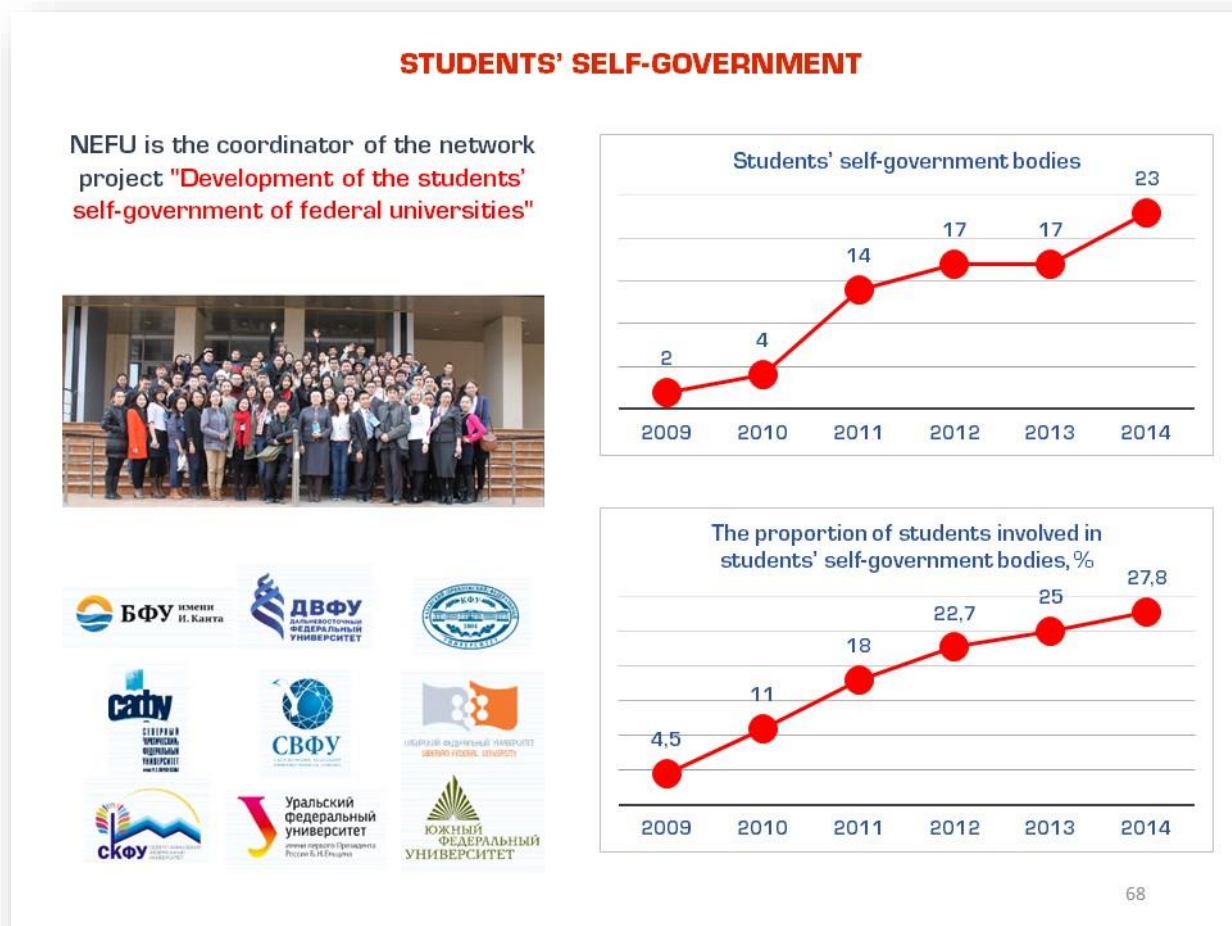
66

NEFU serves as **the Russian Language Information Center** for the University of the Arctic in order to promote and coordinate UArctic programs and projects in Russia, and to provide communication with Russian members. The Center is also responsible for filling and updating of UArctic Russian Portal.

Participation in international projects provides opportunities for establishing effective cooperation with universities from all over the world, increasing marketability and export potential of educational technologies and programs of the University, developing international educational programs and systems of specialists training, also realizing programs of academic mobility for academic and management staff and students.

The most important members of our big family are students. The overarching goal of the University is to give them qualified education, force comprehensively strong-minded personality, responsible for his own behavior, with critical and creative mind, talented and skillful. Specific attention is given to establishing conditions for formation of professional and personal position of students, realization of creative initiative, self-organization of young people. **New forms of student self-governance** as a real form of democracy with relevant rights, opportunities and

responsibility are implemented. All bodies of NEFU self-government are united into the Student Coordinating Council for making decisions on issues regarding NEFU students' daily living activities. In 2009 to 2014, the quantity of student self-governments has increased from 2 to 23, the student contingent of constantly participating in organization of students' self-government bodies activity has been increased from 4.5% in 2009 to 27.8% in 2014.



СВФУ является координатором сетевого проекта «**Развитие органов студенч**NEFU is the coordinator of the network project on **development of the students' self-government in federal universities**. In May 2014, NEFU hosted the Yakut Format Student Forum, which established the Association of the students' self-government of federal universities. Nikolai Nifontov, the PhD student of Institute of Physics and Technologies, was elected as a chairman of the Association.

Most of all, the University is proud of the achievements of its students. It is not only excellent study, it is also NEFU's students' success in All-Russian and international olympiads, creativity and sports competitions. Year by year, students' achievements becomes greater in number and better in quality, which means **we are on the right track!**

NEW TRADITION: ANNUAL FRESHMEN DAY



69

ACHIEVEMENTS OF NEFU STUDENTS

- 39 students of NEFU are members of national team of Russia in 12 sports (including 9 Olympic sports and 3 Non-Olympic sports), 6 of them are honored master of sports of Russian Federation, 9 are international honored master of sports, 3 are international grandmasters, 21 are master of sports of Russian Federation
- In 2013 Stepanida Kirillina, the student of Institute of Mathematics and Information Science, won the title of **world champion in Russian draughts among women**
- Irina Platonova, the master student of Institute of Sports and Physical Education, won the **Russian Cup of International Draughts** among men and women in 2013
- Ruslan Poiseev, the master student of Institute of Sports and Physical Education, became the **champion of Russia in taekwondo** in 2013
- Stepanida Artakhinova, the master student of Institute of Sports and Physical Education, became the **world champion of Paralympic archery** in 2013
- In 2013 the student of NEFU, the multiple champion of Russia, Europe and world champion in freestyle wrestling, Victor Lebedev, won the Kuvaev international tournament of freestyle wrestling in Kazakhstan
- In 2014 the students of NEFU, Victor Lebedev and Egor Ponomaryov, won gold and silver medals at the **Russian Championship of freestyle wrestling**

70

ACHIEVEMENTS OF NEFU STUDENTS

- In 2014 the student of Institute of Engineering & Technology Nyurguyana Azarova became the **world champion of international draughts** in classic and blitz programs among juniors and cadets
- In 2014 the student of Institute of Mathematics and Informatics, Zhao Hanqing, became the **champion of China of international draughts** among youth
- The top-rated player of **Go (baduk)** is the NEFU team coach, the master student, Kim Junghyeop
- In 2014 the student of NEFU, Aytal Karbakanov, became the **world champion of mas-wrestling**
- In 2013 the team of NEFU successfully performed at **International Psychological and Pedagogical Olympiad** in Spain (diplomas of level I and II)
- In 2013 the students of NEFU won at the Far-East stage of **WorldSkills Russia** championship
- **NEFU team of KVN "Polyarnyi Express"** became the winner at KVN Interregional League "Baltika" in 2012 and became the winner at KVN Central League "Povolzhie" in 2013
- In 2012 and 2013 NEFU was recognized as the best university for the development of **student teams** in Republic of Sakha (Yakutia) (2.5 thousands of students, amount of work done – 70 million roubles)

71

VIII. MODERNIZATION OF INFRASTRUCTURE

- From 2010 to 2014 more than **77 thousand square meters** of classrooms, laboratories and other areas were reconstructed and renovated
- At the expense of Development Program, the modernization of **120** classrooms and **99** laboratories was performed, **67.5 thousand copies** of textbooks were purchased in the period of 5 years
- More than **2 232 mil. rubles** from funds of **Development Program** and extra-budgetary funds were transferred for the purchase of equipment, including **1 132 mil. rubles** for educational, academic and scientific equipment, **1 038 mil. rubles** for equipment for the communications and IT infrastructure
- Material and technical base of scientific research has been substantially updated. **Modern fleet of scientific equipment** for medical, biological and chemical, physical, technical, mining, exploration, engineering, mathematical fields of science and education and innovation was created

72

THE UNIVERSITY CAMPUS

BEFORE



The wooden building (March 2011)



The building of Faculty of Philology
(July 2003)

AFTER



The dormitory № 9 (July 2014)



The Arctic Innovation Center
(August 2014)

73

THE UNIVERSITY CAMPUS

BEFORE



The Academic Laboratory Building
(July 2004)



The Main Academic Building
(February 2003)

AFTER



The Academic Laboratory Building
(August 2014)



The Main Academic Building
(August 2014)

74

THE UNIVERSITY CAMPUS

BEFORE



The building of Institute of Medicine
(March 2011)

AFTER



NEFU Medical Clinic
(August 2014)



The Dormitory № 12
(May 2011)



The building of Institute of Medicine
(June 2012)

75

In order to provide personnel and academic support for the innovative development of the Russian Far East and the Baikal region, it is necessary to expand the educational, research and laboratory buildings of NEFU. At the same time, according to the results of monitoring of activity of the universities of the Russian Federation in 2013, **the total area of teaching and research facilities of NEFU was 12.94 sq. m per student, which is significantly below the threshold value for the Far Eastern Federal District (2014 - 14.51 sq. m).** The property complex of the University includes 44 educational and laboratory buildings with a total area of 205,370 sq. m., including the operational management - 135,909 sq. m. The total demand for additional space educational, research and laboratory buildings is 65 350 sq. m.

The necessity of modernizing the NEFU property complex is caused by the implementation of one of the main functions of the federal university which is personnel and academic support of the advanced development of the Far Eastern and Arctic zones of Russia in accordance with the concept of long-term social and economic development of the Russian Federation for the period up to 2020 and in accordance with the Development Strategy of the Russian Arctic and ensuring national security for the period up to 2020.

Particularly relevant issue for the Sakha Republic (Yakutia), a region with a shortage of labor, becomes the availability of human resources to provide implementation of the projects on integrated development of the region. According to the forecast, more than 175.4 thousand people will be employed in investment projects by 2016 and 64.6 thousand people by 2025. By 2016, the involvement of 76 thousand people of local workforce will be required, including 36.7% for mining, 52.3% for construction, 4.7% for transport and communications and others. In order to ensure implementation of investment projects in full, demand for graduates in all specialties will be 44.5 thousand people until 2020, including 16 thousand of the graduates of NEFU.

According to the forecast of the need for the region's labor force, the structure of the programs implemented at the University is changing - the share of technical and engineering fields of education increases, which requires a modern laboratory base and development of innovative infrastructure. Due to the acute shortage of educational, laboratory and ancillary space for students of engineering and technical profile, there is a need of the construction of **the building attached to the body of technical faculties (5 thousand sq. m).**

The development of modern medicine and training of medical workers are priority of the state program of development of the Far East and the Baikal region, which is relevant to attracting, retaining and increment of labor potential of the region. In the Republic of Sakha (Yakutia) at the initiative of the Republic's head the construction of children prenatal, oncology, cardiology centers is beginning, which require well-timed preparation of highly qualified specialists. Out of five subjects of the northeast of Russia training of specialists with higher education in the enlarged group of specialties "Public Health" is carried out only in the North-Eastern Federal University. However, the turnout of doctors and nurses from NEFU annually covers only 35% of the needs of Yakutia. We cannot satisfy the needs for medical personnel of Magadan and Chukotka Autonomous Okrug. In this regard, we face the task of three-time increase of training health workers, which will require the construction of new academic and laboratory building of NEFU's Institute of Medicine (36 thousand sq. m).

The key problem of the Far East is a large-scale out-migration from the East of Russia, which continues for more than 20 years and which cannot be considered finished yet. Compared to 1995, the population of the Republic of Sakha (Yakutia) decreased by 7.8% (81 thousand people), Kamchatka Krai's population decreased by 23.9% (101 thousand people), Magadan Oblast's population decreased by 43 % (115 thousand people), Chukotka Autonomous Okrug's population decreased by 46.8%

(45 thousand people). In this regard, the next key tasks of NEFU were determined by the Government of the Russian Federation: to attract and retain young people, including those who came from other regions; the development of secondary and higher professional education to build human resource capacity sufficient for the implementation and support of large investment and infrastructure projects and innovative development territory as a whole; conducting technological audit in enterprises; training and professional retraining of specialists of outside organizations.

However, the total area of dormitories of NEFU is 101 thousand sq. m, where in accordance with the regulations a little more than half of the students who are in need of accommodation live. The total number of nonresident students who require dormitories is more than 9.5 thousand people, 4786 of them are not settled in the dorms. **It is necessary to construct the complex of dormitories for 1600 beds in Yakutsk, to launch the second stage of apartment type dormitory for 200 beds in Mirny, to construct dormitories for 400 beds in Neryungri.**

Physical wear of individual buildings and engineering services of University amounts to 100%, due to a combination of the following factors: long service life, low quality of materials and construction, design flaws of buildings built in 1960-70s. Accelerated physical deterioration of buildings and engineering services caused to a greater extent by extreme climatic conditions of the exploitation region. The period with negative daily temperatures in Yakutsk is an average of 210 days a year. In Central Yakutia. there are 50-60 days in winter with a temperature below -40 ° C. Operation of buildings and engineering services carried out under conditions of harsh seasonal temperature variations of 80-90 ° C and daily temperature variations up to 35 ° C. All this leads to a reduction the period of current and complete overhaul of certain structural elements of the building and engineering support, modernization of the university campus.

In recent years, an increase in vegetable soil is observed due to the active industrial influence, which is characterized by a high content of salts and organic materials, which in turn reduces the rigidity, increases the deformability of soil and leads to the formation of cryopeg and non-freezing *taliks*. All this together leads to the formation of non-uniform deformation of soil foundation, the emergence of frost mound, cracks and holes in the road surface, the general disruption of the internal improvement of campus.

NEFU is implementing the Program of energy saving and according to the Center for Comprehensive Energy Efficiency and Conservation of the Institute professional management and energy efficiency of Ministry of Education and Science

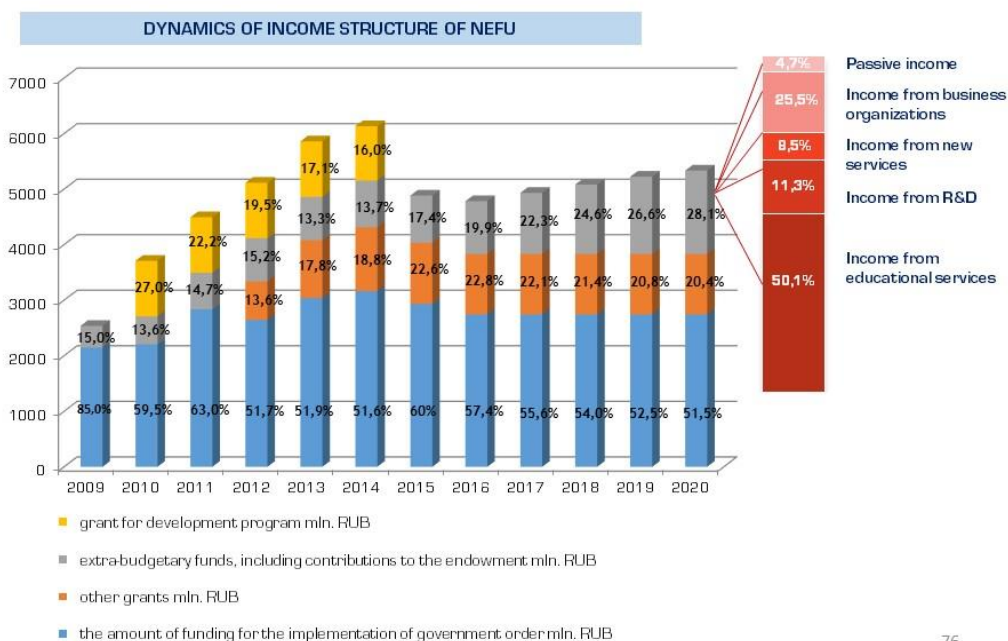
of the Russian Federation for 2014. NEFU is one of 40 universities, fulfilling all the requirements of the order of the Russian Ministry of 18.04.2012 № 309 and the Federal Law of 23.11.2009 № 261-FZ "On energy saving and energy efficiency improvements and on Amendments to Certain Legislative Acts of the Russian Federation".

Along with that, it requires modernization of academic and laboratory facilities to ensure conditions of "barrier-free environment" (providing physical access to facilities for the disabled and people with limited mobility). The proportion of educational and laboratory buildings equipped with ramps is 13.6%, the proportion of educational and laboratory building with expanded doorways is 25%, the proportion of educational and laboratory building with lifting elevators is 11.3%, the proportion of educational and laboratory building with local lowering struts-barriers - 13.6%.

NEFU implements the policy of earned income to create financial and economic stability of the university, under the successful implementation of the development program of the university, which is funded at 4.98 billion rubles. This policy is implemented in the creation of a modern fleet of educational and scientific equipment, productive activities of all departments of the university and small innovative enterprises, and, most importantly, in the core staff.

IX. ACTIVITIES TO ENSURE FINANCIAL AND ECONOMIC CAPABILITY OF NEFU

EARNED INCOME POLICY



NEFU will significantly increase the proportion of budget incomes in the total amount of financial support of the university. To solve the problem, university need to expand their financial base to provide a stable system of multi-channel funding through the diversification of income-generating activities. The university is working on the formation of "product portfolio" of the university, in which key competencies are educational and scientific activities.

The main resources and factors that ensure the expansion of funding sources and the success of the policy of earned income are formed in the first five years of NEFU development competitive on the domestic and international level of research and education, innovation and expert consulting organizations, which are provided with modern teaching and scientific equipment and highly qualified staff.

The priority for our university in educational activities is to create orders of regions, enterprises and organizations on training and the implementation of continuing education programs in terms of training and professional retraining. The main competitive advantage of the university in the education market is to enhance the education quality and guarantee the quality of education and training in all programs implemented at NEFU, as well as the construction of the educational policy of the university on the basis of the concept of "learning throughout life» (Life Long Learning). NEFU creates conditions for human lifelong learning, learning knowledge and skills in various fields of knowledge, communication technology and self-development for all residents of the North-East of the country throughout life.

Share of income from educational services will be more than 50% of the extra-budgetary income and 12% of total income; including the share of income for the state order of regions for training of specialists will be 20% of the extra-budgetary income and 6% of total income.

Creation and development of innovative infrastructure facilities, upgrading existing equipment units engaged in commercial activity, allows the university to provide people and businesses qualitatively new kinds of services, such as certification and testing products of industry; electronic trading through its own trading platform; the provision of high-tech medical services, etc.. The share of new services will be 8% of the total budgetary income and from 2% to 5% of its total income. Measures to increase of funding sources, we have chosen, will also contribute to learning through NEFU talented students, today the university pays for training of 250 students in NEFU, establishes university scholarships for outstanding achievements and research. Rising of the University incomes provided including thanks to the successful research and expert and analysis activities carried out based on resources created as part of the Development Program.

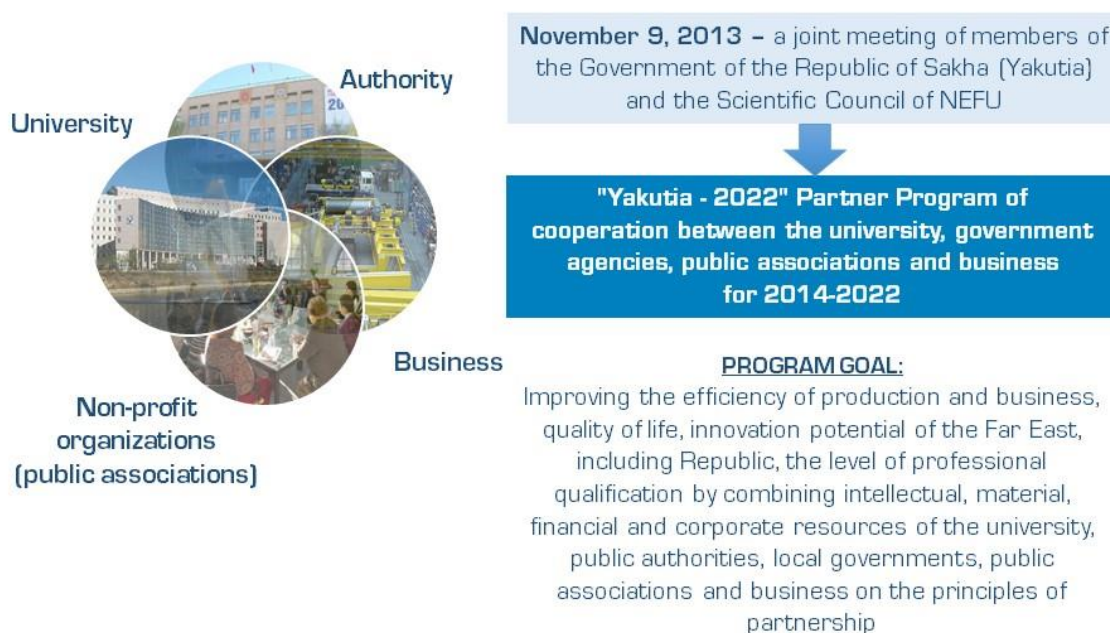
In this case, the stability of funding from the Ministry of Education and Science of the Russian Federation on the implementation of the state order has created the form of long-term financing project as the endowment fund, which supports educational and research projects.

In the direction of research activity, it focuses on the participation of the university in federal projects, programs, grants, as well as the expansion of R & D performed under the orders of regions and enterprises, integration with scientific institutions of Russian Academy of Sciences and foreign research centers.

With the development of grant forms of support basic and applied science one of the main instruments for financing research in universities and academic institutions becomes Russian Science Foundation. Example: in 2014 there were announced the results of the first competition of Russian Science Foundation "Fundamental research and exploratory research by individual research groups", which caused many questions in the scientific and expert community. From 11,775 applications received for the competition, there were supported by 876 applications from 49 regions of Russia, which is only 7.4%. However, about 67% of the supported applications accounted for the institutions of the Central and Northwestern Federal Districts. Forty-seven percent of the supported projects are in Moscow. Throughout the Far Eastern Federal District supported only 27 projects. NEFU and FEFU won one project. The results of the first competition show a strong imbalance in the distribution of funding across regions and districts. Noting the importance and relevance of this form of state support as grant projects of Russian Scientific Fund, we consider it necessary to review and improve the principles and criteria for the allocation of grants to regions and districts. To stimulate and support the priority regional research requires the introduction of a new evaluation system and the distribution of funding for research projects through Russian Scientific Fund, including quotas for the regions / districts.

November 9, 2013, an enlarged meeting of the Government of the Republic of Sakha (Yakutia) and the Scientific Council of NEFU, which discussed the role of the university in social and economic development of the region and joint activities.

COOPERATION BETWEEN THE UNIVERSITY, GOVERNMENT AGENCIES, PUBLIC ASSOCIATIONS AND BUSINESS



77

The University has traditionally attached great importance to cooperation with business, governments, public associations. This interaction allows NEFU successfully resolve issues of personnel, scientific and innovative support of socio-economic development of the region.

In pursuance of the decisions taken at the meeting it was developed "Yakutia-2022" an affiliate program of cooperation between business, university, government and public associations. Analyzed the Action Plan of the Government of the Republic of Sakha (Yakutia) in 2011-2019 in the framework of realization of Development Program of NEFU for 2011-2019. (Order of the Government of Sakha (Yakutia) on May 11, 2011 №459-p). According to the plan, the Government of the Sakha Republic (Yakutia) should be provided to support the development of logistics base: construction of teaching and laboratory building of Polytechnic Institute (branch) of NEFU in Mirny, design and construction of educational and laboratory complex in the quarter 79 of Yakutsk, the construction of a student dormitory and etc.

ACTION PLAN OF REPUBLIC OF SAKHA (YAKUTIA) GOVERNMENT IN 2011-2019 UNDER DEVELOPMENT PROGRAM OF NEFU 2011-2019

- 1. Construction of building of Polytechnic Institute (branch) of NEFU in Mirny.** Deadline: 2011-2015, (in progress)
- 2. Participation in the construction of a 941 place dormitory of NEFU in the 67 quarter of Yakutsk - 58 mln. RUB.** Deadline: 2011-2012. (fulfilled)
- 3. Free of charge passing of construction documents - 17 mln. RUB.** (fulfilled)
- 4. Resettlement and demolition of two 3-storey apartment buildings** (fulfilled)
- 5. Free of charge passing of teaching and laboratory facilities in 6 thousand square meters in the building in Yakutsk on 1, Lenin ave.,** (fulfilled)
- 6. Shared-equity construction of Medical Institute building of NEFU.** Deadline: 2016-2019.
- 7. Carrying out activities to increase the power supply of blocks 64, 66, 67 in Yakutsk for facilities of Development Program of NEFU.** Deadline: 2011-2018 Contractor: The Ministry of housing and public utilities and energetics of RS (Yakutia). Funding: Yakutskenergo Invest program.
- 8. Implementation of the system of state orders for personnel training.** Deadline: from 2010. Executive: the Ministry of Vocational Education, the Ministry of Finance of RS (Yakutia) (2010-2014-trained 592 students on the state order; 60 mln. RUB per year)
- 9. Creating a sustainable system of professional development for manufacturing companies.** Deadline: 2011. Executive: the Ministry of Vocational Education of RS (Yakutia)
- 10. The co-sponsorship with the creation of small innovative enterprises.** Deadline: 2011-2015. Executive: State Committee of RS (Yakutia), "Yakutsk" City District, 2014 – "Indorstroy" SIE

78

In the interests of the region, NEFU formed joint clusters: medical and construction. Cooperation with other regions of Siberia and the Far East is developing. NEFU cooperates with the administrations of Magadan Oblast, Chukotka Autonomous Okrug, Kamchatka Krai, the Republic of Buryatia, Amur Oblast, Primorye and Krasnoyarsk Krai, it is preparing an agreement with the Trans-Baikal Region.

There is a system for partnerships with Russian and international companies, aimed at providing high-quality training of competitive personnel and the practical implementation of the research and innovation potential of the university.

One of the tools to attract extra-budgetary funds to the university and financing projects primarily aimed at supporting students is the formation of special-purpose capital through the creation of an endowment fund. Endowment for the development of a NEFU with amount of 157 million rubles was formed by the Fund. The income from endowment, for example, in 2014 amounted to 10.1 million rubles out of 102 million.



THE ENDOWMENT FUND OF NEFU



- The Endowment Fund was established **in 2011**
- Amount of the fund in 2014 - **157 million rubles**
- Main areas: funding for research and educational projects, activities of academic mobility of students and teachers, the establishment of scholarships and grants, modernization of material and technical base, etc.
- The Fund actively supports projects of students and young teachers of NEFU
- Our sponsors: Fedor Andreev (ALROSA), Vladimir Bogdanov (Surgutneftegaz), Vladimir Yevtushenkov (AFK "Sistema"), Vyacheslav Shtyrov, Yegor Borisov etc.
- NEFU is a **coordinator of the network pilot project** for the development of endowment funds of federal universities

79

In 2013-2014, the income from the trust management of the property, constituting the endowment for the NEFU development, allocated for the implementation of the Concept of development of the system of support for NEFU young scientists. So, thanks to the Endowment Fund:

- Annually, winner students of the NEFU Academic Mobility competition have the opportunity to go on internships in foreign universities;
- Young scientists receive scholarships at the time of passage of training and internships abroad;
- Graduate students and young scientists have the opportunity to receive financial assistance for business trips;
- Foreign students studying at the university, receive scholarships to cover the costs of training and nutrition;
- 15 students (on the basis of competitive selection) received the opportunity to study language courses and participate in the London International Youth Forum 2014.

Since 2013, NEFU coordinates the pilot project on development of a common information space in the field of endowment development in the network of federal universities.

In accordance with orders of the president of the Russian Federation Vladimir Putin, signed after a meeting on the state support of priority investment projects and territories of priority development in the Russian Far East on 1 September 2014 in Yakutsk, Order No. 2169 “On cooperation with public corporations and joint stock companies”, North-Eastern Federal University sent appeals to 34 legal entities with a request to consider the replenishment of NEFU Endowment Fund and invitations to visit the University to discuss prospects for long-term partnership. As of December 29, 2014, the amount of the University endowment was replenished by 50 million rubles from the University partner ALROSA JSC (pursuant to previous agreements dated March 29, 2014), and the present amount totals to 157 million rubles. A significant part of the companies refused financing, some are considering the appeal.

X. EXTERNAL EVALUATION OF THE UNIVERSITY ACTIVITY

EFFICIENCY MONITORING INDICATORS OF NEFU ACTIVITY (MES RF)

Indicator name	Unit	Indicator values of the University		
		2011	2012	2013
Educational activity	Qpts	56,84	55,14	58,28 (with branches) 60,01 (leading university)
Research activities	RUR thous.	169,776	192,56	221,27
International activity	%	0	0,05	0,14
Financial and economic activity	RUR thous.	2403,619	3291,73	3361,7
Infrastructure	sq. m.	8,258	12,77	12,94
Employment (data of the Ministry of Labour and Social Protection)	%	-	96,73	97,87
Additional indicator	ea.	-	-	6,04
The number of indicators, the value of which exceeds the threshold	-	2 из 5	3 из 6	4 из 7

80

EXPERT REVIEW OF NEFU ACTIVITY FOR 2010 TO 2012

NEFU TOTAL POINT SCORE is **620**,

that allowed to refer NEFU to the **first category A2** in accordance with the methodology of the Ministry of Education of the Russian Federation, especially, implementation of the university development program has **a significant impact on the social and economic development of the region** with a tendency to strengthen the influence on trends of the social and economic, scientific, educational and innovation policy, realized in the region in the medium term.

A1	700 and more	Significant impact on the development of the region, forming a stable directing influence
A2	from 600 to 700	Significant impact on the development of the region with a tendency to strengthen the directing influence
B1	from 500 to 600	Moderate impact on the development of the region with a weak tendency to strengthen the directing influence
B2	from 400 to 500	Slight impact on development of the region with a tendency to strengthen the directing influence
B3	from 300 to 400	Slight impact on development of the region without a tendency to strengthen the directing influence
C1	from 200 to 300	The University has almost no impact on the development of the region, with a probability to strengthen directing influence
C2	from 100 to 200	The University has almost no impact on the development of the region, with a slight probability to strengthen directing influence
C3	less than 100	The University has almost no impact on the development of the region, with absence of probability to strengthen the directing influence

81

In 2013, the assessment of progress and results of NEFU development program was carried out. According to the methodology of the Ministry of Education and Science of the Russian Federation, NEFU was classified **as A2 category**, namely, "the implementation of the Federal University development program has a significant impact on the social and economic development of the region, on the development of academic, educational and innovation potential of the region with a tendency to strengthen the influence on trends of the social and economic, scientific, educational and innovation policy, realized in the region in the medium term".

NEFU DEVELOPMENT PROGRAM FOR 2010-2019

- 6 fields of concern of NEFU, 18 projects, 123 activities

Funding of Development Program for 2010-2014, NEFU, mln. RUB

№	Product name of Development Program directions	Grant of RF	Co-funding from NEFU extrabudgetary resources
1.	Achievement of a new quality of the University (modernization of the educational process - the introduction of its own educational standards, the development of new educational programs, modernization of research, administrative and human resources opportunities; development of infrastructure)	2 514,8 (52,6%)	879,9 (92,8%)
2.	Organization of environmental safety and technologically efficient reproduction of the mineral resource base, environmental management	308,4 (6,5%)	13,0 (1,4%)
3.	The use of high technology and production in the North	866,1 (18,1%)	10,0 (1,1%)
4.	Improving the quality of life in the North	901,9 (18,9%)	16,3 (1,7%)
5.	Preservation and development of culture of the peoples of the Arctic	140,9 (2,9%)	13,3 (1,4%)
6.	Analytical and staff support for innovative socio - economic development of the North-East of Russia	46,3 (1,0%)	15,3 (1,6%)
Total		4 778,3	947,7

82

NEFU DEVELOPMENT PROGRAM FOR 2010-2019


Funding of Development Program for 2010-2014, NEFU, mln. RUB

№	Name of the group costs	Amount, mln. RUB
1.	Providing of educational and research process	2 506,8
1.1.	Purchase of educational, academic and scientific equipment	1 119,8
	<i>including equipment transferred / used by small innovative enterprises</i>	207,9
1.2.	Fitting out of training and research units by personal and office equipment	187,6
1.3.	Modernization of the network and IT infrastructure (including fitting out of licensed software)	850,5
1.4.	Improvement of staff working conditions and student living conditions (including the provision of security conditions)	217,0
1.5.	Subscribe to scientific journals and purchase of textbooks (including subscription to the domestic and foreign electronic resources licensed educational and scientific literature)	74,5
1.6.	Purchase of services of expert consulting organizations, outside experts	57,4
2.	Funding for R & D temporary creative groups and educational groups	547,1
2.1.	<i>including recruiting of leading scientists of the world, nation</i>	157,3
3.	Staff training (internships, including foreign, training, participation in seminars and other events on scientific topics)	290,2
4.	Modernization of the university infrastructure, includig:	1 785,9
4.1.	Purchase of infrastructure (buildings)	617,4
4.2.	Current and extensive repairs of campus facilities	1 168,5
5.	Финансирование участия и проведения российских и международных научных и учебно-научных, спортивных и культурно-массовых мероприятий Funding for participation and realization of Russian and international scientific, academic, sporting and cultural events	265,7
TOTAL		5 395,7


83

NEFU has been in the top 40 best universities of Russia for two years in the **National University Ranking** of Interfax information agency and Echo of Moscow radio (2012 – 35 place, 2013 – 38 place). In 2013, NEFU took the 6th place among the Russian universities by the level of university communications development in social networks in the ranking, conducted by "Interfax" information agency. The University took the 61 place **in the Russian universities ranking** of Expert RA agency for the academic year 2013-2014, rising by twenty positions over the year. In 2014, the university entered the Top 200 best universities in the BRICS countries (**QS BRICS ranking: 2014** - 151-200 places). The university has entered into the list of university leaders in the national university ranking of **Bio Forum (Life Sciences, 2014)**. NEFU entered the Top 40 universities, which were chosen by the winners of School Competitions, and took the 24th place.

POSITIONING OF THE UNIVERSITY



- According to the results for 2012 and 2013, NEFU is in the **Top 40 National University Ranking**
- According to the results of 2013, NEFU ranked **61th** (in 2012 - 81th place) in the RF university ranking of **Expert RA agency**
- In 2014, NEFU entered the **Top 200** best universities in **BRICS** (151-200 place). There were 53 universities from Russia
- NEFU became the winner of the 4th All-Russian **competition in the field of quality management**



TOP 25 UNIVERSITIES,
 chosen by the winners of School
 Competitions for 2012

1	MSU
2	HSE
3	MIPT
6	SFU
12	UFGU
24	NEFU
39	NCFU

84

PRESIDENT OF RUSSIA VLADIMIR PUTIN AT NEFU (September 1, 2014)



Orders of the RF President V.V. Putin following the results of the meeting of September 1, 2014



- In pursuance of the Orders of the Russian President, letters to 34 companies with a request to consider the issue of replenishment of NEFU Endowment Fund and the offer on cooperation in training and implementation of research and development were sent
- ALROSA, Transneft, Rosneft, Sberbank, VTB agreed to replenish NEFU Endowment Fund
- Cooperation agreements with RAO Energy System of East, YATEC, VTB, Fund of infrastructure and educational programs of "RUSNANO" JSC were signed

85

EXTERNAL EVALUATION OF THE UNIVERSITY ACTIVITY



VLADIMIR PUTIN, President of Russia (September 1, 2014):

"Your university occupies an entire city block. And there are new buildings, built for the last few years, and the program is well developed. 20,000 students is very good indicator on number, but also on the quality of education, the quality of training, which your teaching staff give, of course, it is a very high level. I was pleased when NEFU Rector Evgenia Mikhailova told about the work of Small Innovative Businesses today. I was pleased with your progress in this regard, because to begin three years ago, with four million rubles and reach up to 150 million over three to four years is very good indicator I am very pleased that large companies start working together with the University, for example, ALROSA company."

DMITRY LIVANOV, the Minister of Education and Science of the Russian Federation (March 5, 2013):

"I was impressed by two main things after visiting NEFU. The first is that the university is actively developed, there are new laboratories, new venues, and the second is that there is a very pleasant beneficial and creative policy. It takes students, teaching staff, including the university administration. I think due to these two factors, NEFU has a great promising future"



86

EXTERNAL EVALUATION OF THE UNIVERSITY ACTIVITY



ANDREI FURSENKO,
Aide to the President of the Russian Federation

(August 30, 2014):

"Progress is evident. The university has become popular in Russia for several years. I want to point that this is only the beginning. A good start. You have to understand that education and science are innovative things, their effectiveness is not immediate, so in order to give a final assessment of all university activity, it is necessary to wait. Most importantly, the initial attitude and enthusiasm have not disappeared. NEFU has all the opportunities to become the strongest university"

SERGEY KRAVTSOV, Head of Rosobrnadzor
(May 7, 2013):

"Impressions after visiting Medical Clinics are special: I have not seen the universities with such a serious approach to medical education. NEFU can be considered as a leader in this field. Indeed, theory and practice are equally important for students, I think you need to develop new workbooks, with current technologies. It is necessary to hold this level further".



87

EXTERNAL EVALUATION OF THE UNIVERSITY ACTIVITY



VLADIMIR MIKLUSHEVSKY, the Governor of Primorsky Krai
(April 3, 2013):

"NEFU Small Innovative Businesses have a promising future" - the head of the Primorsky Krai highly appreciated the innovative activity of the university. "The main treasure of Yakutia is North-Eastern Federal University ..."

RUSTAM MINNIKHANOV, President of Tatarstan
(November 15, 2011):

"The form of the universities work is changing - educational institutions now focused not only on training, but also on the development of research projects, the opening of "personal activities". I wish NEFU innovators successful implementation of academic research into life of Yakutia's natives, production of small businesses"



88

NORTH-EASTERN EDUCATIONAL FORUM WITH PARTICIPATION OF DEPUTY PLENIPOTENTIARY OF THE RF PRESIDENT IN THE FAR EASTERN FEDERAL DISTRICT A.V. MOTOVILOV AND COUNCIL OF RECTORS OF HIGHER EDUCATION INSTITUTIONS OF THE FAR EAST FEDERAL DISTRICT

"ROLE OF THE UNIVERSITY IN THE SUSTAINABLE DEVELOPMENT OF THE REGION" – NEFU RECTOR REPORT FOR 5 YEARS, December 9, 2014



Meeting of university rectors and heads of executive authorities of FEFD
(A.V. Motovilov, S.N. Ivanchenko, Chairman of the Council of FEFD Rectors, PNU Rector)



Exhibition "University: Territory of Innovative Development of the Region"
(A.A. Shumeyko, Rector of Amur State University of Humanities and Pedagogy, A.A. Fatkulín, FE RTC Director)



Forum Plenary Session

89

The results of NEFU Development Program in 2010-2014, as well as the external evaluation of the University's activity allow us to conclude that the formed educational, academic, organizational, and innovative reserve can serve a basis for the active development of the University in the priority areas, its integration into the social and economic space of the Northeast of the country and entering the international level. Today the University enters into a new phase of its development - we set new priorities of NEFU activity for the next five years.

XI. STRATEGY – 2020

BY 2020, THE UNIVERSITY DEFINED THE FOLLOWING STRATEGIC ACTIVITIES:

- 1. The development of science and creation of world-class research center** in 9 directions (Mathematics, North Economics, Paleontology, Ethnopedagogics, Arctic Medicine, Biomolecular Technology, Climate Research, Mineral Resources and Technology of their Evaluation, Environmental Protection and Rational Use of Natural Resources)
 - achievement of results, influencing on social development of the macro-region and enrichment of the world culture
 - combination of basic research and applied developments with the educational process in 8 integrated areas of training (Economics, Mathematics and Mechanics, Earth Sciences, Engineering and Construction Technology, Clinical Medicine, Chemical Technology, Industrial Ecology and Biotechnology, Cultural Studies and Social and Cultural Projects)
 - legal audit of regional and federal legislation on the rational use and protection of mineral resources, mining of certain types of mineral raw materials
 - implementation of the recruiting program of professors, researchers, leading scientists

90

STRATEGY – 2020

- 2. Bringing up of talents and education of students as citizens of the country and the world**
 - implementation of interuniversity project "Development of students creative abilities"
 - implementation of purposeful activity system on the potential fulfilment of young teachers, recommended by the Board of Professors and approved by the Coordination Board of Student Associations
- 3. The Entrepreneurial University,** focused on the introduction of advanced developments in the macro-region
 - development and support of entrepreneurship, the creation of Small Innovative Businesses in the regions of influence
 - formation of the environment, assisting to continuous generation of business projects by students and teachers
 - the creation of industrial incubator in the field of construction, housing, energetics, road facilities and biotechnologies
 - the creation and development of engineering centers
 - development and implementation of launch strategy of NEFU research and educational and innovation and business services to the national and international markets
 - NEFU inclusion in the development plans of Yakutsk, Mirny, Neryungri, Anadyr, Magadan
 - implementation of management retraining programs
 - commercialization of technologies, tools and methodologies of the educational process

91

STRATEGY – 2020

4. Internationalization of activities

- development and implementation of joint master's degree programs with foreign universities, including foreign language
- realization of the cooperation model with foreign partners **"Education-Science-Business"**

5. Yakut Global University

- NEFU 100 computer education programs - 100 virtual tutors for pupils and students
- reach to 5 thousand students by e-learning (Master's programs)
- development and implementation of VIRTULAB (virtual laboratories of Physics, Chemistry for pupils and students)
- the creation of digital library - providing access to research results of worldwide scientists in the field of science and business

92

STRATEGY – 2020

6. Promotion of NEFU socially-oriented projects in the Republic of Sakha (Yakutia), the Chukotka Autonomous Region, Kamchatka Krai, Magadan and the Sakhalin Region

- free legal advices through the Legal Clinic of the Faculty of Law
- "IT-start" project - learning of computer skills of the older generation (IMI, TTI)
- improving access to health care (groups "Ulybka", "Esculap")
- charity and help in homes for the elderly and disabled and hospitals
- environmental safety, assistance in the extinction of forest fires and the forest restoration, protection of rare and endangered species of flora and fauna
- "Polus Dobra" volunteer building
- "Otchizna" civil-patriotic club
- School of Democratic Culture
- School of Civic Leaders
- Robotics School and Small Computer Academy

93

STRATEGY – 2020

7. Implementation of the earned income policy

- expansion of funding sources
- annual order formation of the regions, enterprises and organizations in the specialists training and implementation of continuing education programs
- participation in the federal projects, programs, grants, R and D expansion, realized under the orders of regions and enterprises
- provision of new kinds of services (certification and testing of industry products, electronic trading, the provision of high-tech medical services, etc.) to the population and enterprises

8. Implementation of the Partner Cooperation Program of university, government, business and public organizations

- conduct of technological audit in stock companies, enterprises, institutions
- expert and analytical activity on all types of activities and consulting services for financial and economic, management activity

94

We have to solve even more important tasks to achieve indicators that are more serious; to do that, we have the most important thing – the unity and a focus on the positive result. I am sure that together we will succeed!

NEFU Rector

Evgenia Mikhailova