



UNIVERSITY CENTRE

International Student Practices. The International Student Practice in JINR Fields of Research has been organized since 2004 on the initiative of the UC, MEPI, MIPT, a number of Polish universities and the Czech Technical University for senior students from the JINR Member States and the countries that have concluded government-level agreements with JINR. Since 2007, due to the increase of appli-

cations for participation, the Practice has been held in several stages. For the duration of the International Student Practice, 870 people have become its participants (see Figs. 1 and 2), 200 of them being students from Polish universities. Since 2007, students from South Africa (186 people) and since 2009 students from Egypt (86) have been taking part in the event.

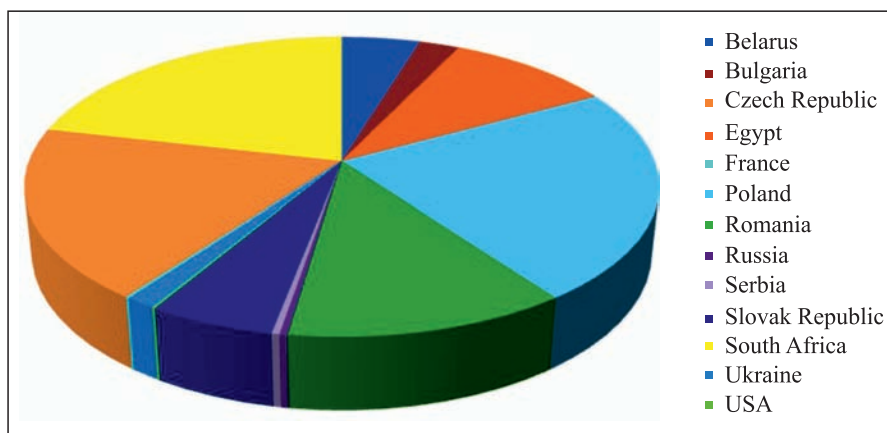


Fig. 1. Number of International Practice participants by countries (2004–2013)

The annual Student Practice in JINR Fields of Research 2013 was held in three stages. The Practice programme traditionally included introductory lectures on the research conducted in the JINR laboratories, excursions to the basic facilities and work on education-and-research projects. The total number of Practice 2013 participants came up to 126 students from Belarus, Bulgaria, Czech Republic, Egypt, Poland, Romania, Slovakia, South Africa, Ukraine, and USA.

On 13 May–3 June, 18 students from Egypt worked on their education-and-research projects prepared by LIT, BLTP, LRB and FLNP specialists. The second stage of the International Student Practice (7–28 July) was attended by 70 students from the Czech Republic, Poland, Romania, Slovakia, Bulgaria, Ukraine and USA. The participants in the final third

stage (9–29 September) were 26 students from South Africa and 10 students from Belarus. The participants

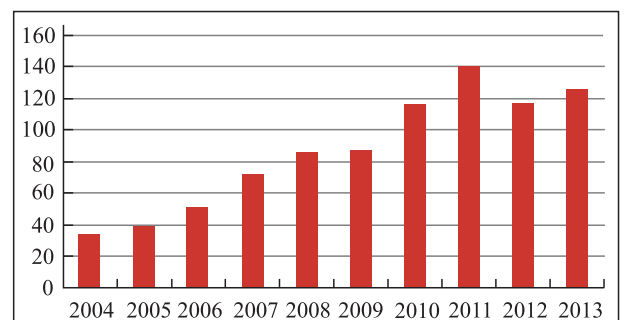


Fig. 2. Number of International Practice participants in 2004–2013

in the second and the third stages of the Practice 2013 worked on the projects prepared by FLNR (17 projects), FLNP (10), BLTP (8), DLNP (7), LIT (3), LRB (3), and VBLHEP (2).

The list of education-and-research projects on the UC website comprises 50 projects, of which 19 were prepared by FLNR specialists, 10 by specialists of FLNP.

The report-presentations of the students on their executed projects are available on the UC website, Practice pages, section “Events”.

JINR-Based Educational Process. In 2013, the University Centre trained 509 students from the basic departments of MSU, MIPT, MIREA, Dubna University and JINR Member-State universities. The UC organized summer practical and undergraduate training courses for 100 students from MIPT, MIREA, Dubna University, St. Petersburg and Tula State Universities, Tomsk Polytechnic University, National Taras Shevchenko University of Kiev, Belarus National University of Informatics and Radioelectronics and Skorina Gomel State University. The UC website (<http://uc.jinr.ru/>) training course database was upgraded (both English and Russian versions) in the sections: particle physics and quantum field theory (26 courses), nuclear physics (21), condensed matter, physics of nanostructures and neutron physics (16), physics research facilities (7), information technologies (8), mathematical and statistical physics (12).

JINR Postgraduate Courses. In 2013, JINR postgraduate courses were attended by 50 students from Armenia, Belarus, Germany, Moldova, Russia and Ukraine (Fig. 3).

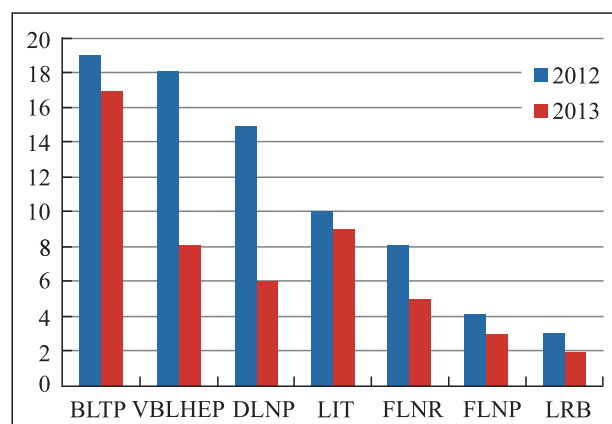


Fig. 3. Distribution of UC postgraduate students over JINR laboratories in 2012 and 2013

The distribution of UC postgraduate students over specialties in 2012 and 2013 is shown in the table.

Distribution of UC postgraduate students by specialties in 2012 and 2013

Specialty	Number of post-graduate students	
	2012	2013
Theoretical Physics (01.04.02)	19	14
Nuclear and Elementary Particle Physics (01.04.16)	22	12
Mathematical Simulation and Numerical Methods (05.13.18)	7	6
Physics Experiment Techniques, Instrument Physics, and Physics Research Automation (01.04.01)	7	5
Mathematical and Software Support of Computers, Computational Complexes, and Networks (05.13.11)	5	4
High Energy Physics (01.04.23)	4	3
Solid State Physics (01.04.07)	3	3
Radiobiology (03.01.01)	3	2
Charged Particle Beam Physics and Accelerator Techniques (01.04.20)	7	1

Organization of Scientific Schools for Teachers of Physics at JINR and CERN. The UC, in collaboration with CERN, continues organizing international scientific schools for teachers of physics from the Member States both at JINR and at CERN. On 23–29 June, Dubna hosted another School for teachers of physics from JINR Member States. The School was attended by 24 teachers and 9 students from Russia, Belarus and Bulgaria. The School programme traditionally included lectures on popular science by the leading JINR specialists, excursions to JINR experimental facilities and laboratories, video conferences with CERN, teachers’ presentations on modern physics teaching trends and a scientific seminar for high school students.

On 3–9 November, the Scientific School for teachers of physics from JINR Member States was held at CERN (Geneva). The School was attended by 30 teachers of physics representing the following cities: Moscow, Aprelevka (Moscow Region), Volgograd, Volgorechensk (Kostroma Region), Volzhskiy (Volgograd Region), Voronezh, Zarechniy (Penza Region), Kazan, Kondopoga, Novoyurievo (Tambov Region), Nizhniy Novgorod, Ozersk (Chelyabinsk Region), Petrozavodsk, Petropavlovsk-Kamchatsky, Rybinsk, Samara, St. Petersburg, Sterlitamak, and Zhlobin (Belarus).

Information on the organization and holding of Schools is available on “Virtual Academy of High Energy Physics” (<http://teachers.jinr.ru/>).

School-Seminar “Integrable Structures in Quantum Field Theory”. In April 2013, in the framework of Bogolyubov JINR–Ukraine Programme on theoretical physics, the School-Seminar “Integrable Structures in Quantum Field Theory” for 20 students and post-

graduates from JINR, MIPT, National Research University of Higher School of Economics (NRU HSE) and National Taras Shevchenko University of Kiev (Ukraine) was organized by the JINR UC together with MIPT, NRU HSE, Kharkevich Institute for Information Transmission Problems of RAS and Bogolyubov ITP of Ukraine NAS.

“Russian Reporter” Summer School Physics Workshop “The 105th Element”. In summer 2013, a physics workshop “The 105th Element” in the framework of Summer School programme organized by the magazine “Russian Reporter” was held in Dubna. For 30 participants of the workshop “The 105th Element” and a workshop on science journalism, excursions and lectures were organized by the Institute specialists. The programme included a JINR–CERN video conference.

Video Conferences. The JINR University Centre continues to provide assistance in organization of video conferences. Live video is provided through a video-conferencing management system of JINR, where by using the UC duplex access point one can take part in a meeting, ask questions and speak in the debate.

In 2013 the following video conferences were held:

— a teleconference between the JINR UC and State Funded Educational Institution of Further Education for Children “Centre of Creative Development and Liberal Arts Education for Gifted Children POISK”, Stavropol;

— a video conference JINR UC–Kislovodsk, School No.17, in the framework of the scientific practical web-seminar “Research Activities of Students as a Basis for the Implementation of a System-Active Approach”;

— a video conference between the Laboratory for Space Studies of Ulyanovsk Section of Volga Branch of the Tsiolkovsky Academy of Cosmonautics of Ulyanovsk State University and CERN;

— a video conference of the boarding school named after A.N.Kolmogorov of Moscow State University (SUC MSU), Moscow schools No.1329 and No.57 and Elektrostal schools with CERN;

— a video conference JINR UC–Tikhvin, Lyceum No.8–Kislovodsk, School No.17 “Neutron Physics: Obtaining and Using Neutrons”;

— a video conference Moscow City Palace of Children (Youth) Creativity–CERN “Research in High Energy Physics”.

Organization of Visits. In 2013, orientation lectures and excursions to the JINR laboratories were organized for students from MEPI (30), Tver State University (25), and for 16 Polish students (Warsaw). Excursions, video conferences and classes in the physical lab for schoolchildren from Dmitrov (19), Dubna (67), Moscow (137), Odintsovo (30), Tver (32), Yaroslavl (29), for 20 students from Kennedy School physics group (Berlin, Germany), for 25 winners of the II Championship of the project “CanSat in Russia”, as well as excursions for Dubna residents in the framework of the programme “Popularization of Scientific Knowledge” (34), were arranged.

Work with Schoolchildren and Teachers. For 25 high-school students from Dubna, classes in physics were held twice a week within the school period. During the period of introductory visits, workshops and physics demonstrations were organized for school groups in the UC physical laboratory.

Training and Retraining of Workers, Engineers and Employees. Seventy staff members of the Institute were trained at the training courses for personnel maintaining facilities subordinate to Rostekhnadzor.

In 2013, six members of the Institute improved their skills at various seminars organized by academic institutions of Moscow; 116 staff members of JINR were trained at the courses organized by JINR and certified by JINR Central Certification Commission. In 2013, certification by the Territory Certification Commission of Rostekhnadzor of 20 Institute executives and specialists in the normative legal acts and normative-technical documents stating requirements for industrial safety in various fields of supervision was organized. In 2013, six students from the Moscow Region Industrial-Economic and Agrarian-Technological Colleges were trained at JINR.

The UC continues to run an English language course for postgraduate students and JINR staff members, and a Russian language course for foreign specialists.

UC Study Guides. In 2013, the following UC study guides were published:

- *S. V. Ulyanov, G. P. Reshetnikov.* “Intelligent Computing Technologies”;
- *D. Dinev.* “High-Energy Heavy-Ion Accelerators”.