



**On the eve of the 115th anniversary of the University the number of students of NULES of Ukraine replenished with 9780 young people for whom it would become their Alma mater. Congratulations!..**

### FROM THE FIRST PERSON



I congratulate all colleagues and students of the National University of Life and Environmental Sciences of Ukraine with the "Day of Knowledge" and our glorious freshmen – with also a significant event – joining the more than 40 thousandth university student fraternity!

I wish you good health, inspiration for good deeds for the sake of our country's prosperity and suc-

cess in their implementation and happy moments in your personal life!

Dear freshmen, you were not mistaken in choosing the place of study, because NULES of Ukraine is a very worthy place among the universities of the world in the sphere of agricultural and environmental sciences, as well as life science and society development. It has great traditions, remarkable achievements in research, education and innovations, for which it was awarded the status of an autonomous (self-governing) and research university, among 12 other top universities of our country, and it is now actively working on completing its accreditation by the U.S. educational standards. Success in this endeavor will be the internationally recognized University certificates.

Dear students, with your hard work in mastering relevant knowledge and skills you can win the right to education or training in many recognized universities around the world, with which the NULES of Ukraine has signed the agreements. Modern training and research laboratories are ready

for you, as well as lecture halls, science and arts groups, sports clubs and cultural heritage of the capital of our country – here this is where and with whom to discover and develop your talents. Protect your time and be resistant to the temptations of the capital, support your friends and do not forget and or disappoint your parents.

Student years are unforgettable, so let them be the best for you! In the university you will be able to meet with the top management of the state, wise professors and associate professors, promising scientists, so, good luck in choosing your political and national heroes. Let your professional choice be correct and happy! And perhaps this is where you will meet also your love for all of your life.

Once again I congratulate all the scientific and pedagogical staff and employees of all departments of our university, I wish you happiness and success in various activities for the prosperity of our country!

Glory to NULES of Ukraine!

Respectfully yours –  
rector Academician D.O. Melnychuk

**Dmytro Melnychuk,  
"we have much to be  
proud of and show..."**

*On the eve of each academic year, the University rector Academician D.O. Melnychuk gives an interview to the "university courier", addressed primarily to freshmen who still do not know anything about the university and its traditions, and their parents, many of whom have certificates of NULES of Ukraine. The year 2013 has not become an exception.*

– Dmytro Oleksiyovych, describe briefly the University of today.

– National University of Life and Environmental Sciences of Ukraine, according to the status of higher educational institutions, is the IV accreditation level research-type institution, which conducts educational, research, scientific-innovative, training-industrial and informational-consultative activities aimed at developing the modern problems of life and environmental sciences, using, reproduction and sustainable development of biological resources in terrestrial and aquatic ecosystems, introduction of new environmental agro-biotechnologies, technologies of reviving safety and fertility of soils, energy saving agricultural technologies, environmental and legal management in rural areas, monitoring and enforcement of standards, quality and safety of agricultural products, processed products and the environment.

Today it is the biggest University in the Eastern territories: only the Kyiv regional center includes 12 training and scientific institutes which integrate 12 scientific-research institutes, 20 faculties, 125 chairs, the unique Ukrainian Laboratory of Quality and Safety of Agricultural Products, Ukrainian Institute of Agricultural radiology. The structure of NULES of Ukraine also includes its Southern Branch "Crimean Agrotechnological University" with 6 faculties and Sri of seedage (AR of Crimea), SS "Scientific-r-Research and Design Institute of Standards and Technology of ecosafe and organic products" in Odessa, 12 Separate Subdivisions of regional higher educational establishments of I- III accreditation levels (2 institutes, 9 colleges and 1 vocation school) in different regions of Ukraine, bases for students' practical training – 3 scientific-research stations, 7 training-experimental farms, special bases in regional universities of NULES of Ukraine, etc.

Training process and scientific research are provided by more than 3 thousand scientific and pedagogical employees, including 1500 persons in the base establishment. 288 Doctors, professors, and over 1000 PhDs, assistant professors work in it.

We provide training of young specialists (by 33 specialties), bachelors (in 29 areas of training), professionals (by 21 specialties and 50 specializations), Masters (by 45 specialties), candidates and doctors of sciences (respectively 80 and 64 specialties). The second higher education can be obtained by 12 specialties, annually more than 5000 AIC managers and professionals go through upgrading and improve their skills in TSI of the University Postgraduate Studies.

– What about the current student recruitment?

– State requirement for 2013 is fulfilled in full. By the way, the same way – as it was before, two thirds of new students recruitment will study at public expense. Thus, only the basic institution of the University enrolled 1744 boys and girls for the first year full-time training by the public order on the bachelors program, 350 more will study on a contract basis. It is they who will shape the youth face of the university. More than 600 people have been enrolled to study by correspondence counted. Overall, 9780 people have become the university complex students.

So, today NULES of Ukraine is training total over 40,000 students and trainees, including 17,000 people of the basic establishment.

– And what about preparing scientific workers?

– On September 1, in NULES of Ukraine 674 graduate students and 26 doctoral students started training with discontinuing their work and without discon-

### EXPECTED GUESTS

**Titles of an honorable Doctor – to a well-known German scientist and public figure**

*The other day to the name of the rector and academician of NULES of Ukraine D.O. Melnychuk a Thank-You Letter was sent by the director of Global Centre of Fire Monitoring Joban Goldummer, who was invited as an honorable guest on this year celebration of the "Day of Knowledge" in the University. For this there is a very serious reason.*

"When I got to know about awarding me the degree of an honorable Doctor of the National University of Life and Environmental Sciences of Ukraine, I felt privileged, because your University is one of the most prestigious in Ukraine and the Eastern European region. So, it's great honor and pleasure for me.

I would like to notice that my relations with NULES of Ukraine were largely inspired by Doctor S.V. Zibtsev. This young and talented scholar is highly respected not only among his colleagues and students of NULES of Ukraine, but also in the Universities and scientific and research institutions of Austria, Germany and the USA, and in the sphere of cooperation with partners of administrative bodies and public society in Ukraine and Eastern European countries.

Cooperation with S.V. Zibtsev, supported by you personally and the

head of TSI of Forestry and Landscape Architecture P.I. Lakyda made significant progress. After opening the Regional Eastern European Centre of Fire Monitoring on the basis of NULES of Ukraine in April this year, the activity of Mr. Zibtsev, who became its director, will be honored at a very high level: he is conferred "The Green Star Award", which is awarded by the International Green Cross of the United Nations on humanitarian issues coordination and by Environmental Program of the UN. I'm proud to accompany my young Ukrainian friend during its delivery.

The success of cooperation depends on the equal contribution of all partners. The recognition of my partners from NULES of Ukraine, who have chosen me as their honorable doctor, by "the third and neutral party" – the United Nations Organization, is the



confirmation of quality and effectiveness of our cooperation.

I believe, that you and the Academic Council of NULES of Ukraine will be equally proud of recognition of cooperation among NULES of Ukraine, Global Centre of Fire Monitoring, which I have an honor to head, Max Plank Association of science development in Germany, the UNO and International Green Cross."

With profound respect

Joban Goldummer,  
Director of Global Centre of Fire Monitoring

## FROM THE FIRST PERSON

## Dmytro Melnychuk, " we have much to be proud of and show..."

*End. Beginning on p. 1*

tinuing their work In 2012-2013 145 master's and 10 doctoral theses were defended.

Given that this year's student recruitment has quite a high score, we may expect that many of today's freshmen are potential scientists.

In 2012-2013 20 specialized scientific councils were functioning in the university and its Southern Branch "Crimean Agrotechnological University", including 16 doctoral and 2 candidate in the base establishment by 45 specialties in 7 areas of science, and "CATU" SB – 1 doctoral 1 candidate by 3 specialties in 2 areas of science. 256 applicants defended their theses there. Besides, 2 collective reviews of the doctoral and candidate theses as well as 1 re-certification of a scientist, who was awarded Ph.D. degree in another state were held there. Among the candidates there are 152 employees, postgraduates, applicants from the the basic setting and 2 – from "CATU" SB.

– *The education system in NUBiP of Ukraine is recognized by the European and world community ...*

– Thus, the structure and training content of the Master at the University has been formed over the past 15 years and adapted to the similar systems in the leading universities in the U.S. and Europe. Cooperation with foreign universities was completed by signing several memorandums on mutual recognition of education and certification of masters – with the Universities of the U.S. – Iowa and Louisiana, College of Chadron (state of Nebraska), University of Humboldt (Germany), Ghent University (Belgium). Memoranda with the Louisiana University and the University of Iowa have been renewed. In recent years we have done and continue to work on big mutual Masters programs and develop joint projects with the Universities of the UK, Canada, Germany, Belgium, Holland, Austria, Italy, France, Czech Republic, Poland, Bulgaria, Slovakia, Japan, China, South Korea, on which there are also appropriate formal agreements. About 160 undergraduate and graduate students get training and internships in the leading universities of the U.S. and Western Europe. One of the areas of international cooperation of the University is students' participation in various programs of industrial training and training-production practices.

– *The University has the status of a research institution. To what extent the level of current research is in compliance with it?*

– Over the past decade, scientific achievements of the University scientists are awarded by 6 State Prizes of Ukraine in Science and Technology, 4 prizes of the President of Ukraine for young scientists, 2 grants of the President of Ukraine to Doctors and a Grant for Talented Youth, 2 awards of the Verkhovna Rada of Ukraine for the most talented young scientists in the fundamental and applied research and scientific-technical developments, 2 awards of the Cabinet of Ministers of Ukraine "For contribution of youth in nation-building" in the nomination "For scientific achievements", a premium of NAAS of Ukraine "For outstanding achievements in agricultural science". For significant contribution to the development of science and education 52 professors were appointed state grants and scholarships of the Cabinet of Ministers of Ukraine were received by 37 young scientists.

Priority of the University scientific research is confirmed by received in the last five years 1579 patents for inventions and utility models, certificates of plant varieties. For this time, the University organized 973 scientific and practical conferences, symposia, seminars, including 384 – International, 127 – nationwide 835 monographs, 209 text-books, 729 manuals and reference books, dictionaries and brochures were prepared for printing and published, more than 23 000 works in scientific journals were published.

An electronic edition of the scientific journal "Bio-resources of planet and quality of life" has been initiated (3 issues have already been published), a collection of scientific papers "Scientific Bulletin of NULES of Ukraine" in 9 series (180 issues are published) and the Journal "Life and Environmental Sciences" are published. They are included in the list of professional publications of Ukraine. The Bulletin of completed scientific research "Science and innovations in NULES of Ukraine" electronic "Scientific Reports of the National University of Life and Environmental Sciences of Ukraine" and "Energy and Automation", are approved as scientific professional journals on agricultural, veterinary, biological and engineering sciences. Jointly with the Institute of Microbiology and Virology of NAS of Ukraine a scientific journal "Journal on Microbiology", scientific-practical journal "Food Industry of AIC", and science-production magazine "Modern poultry" are published.

The achievements of the University scientists are constantly presented at the international agricultural fairs and international exhibitions-fairs and annual international exhibitions of the educational establishments, by their resulted NULES of Ukraine over the past five years having been marked by 4 honorary titles of "The Leader of Modern Education", 54 medals (including 42 gold), 3 gold medals "Leader of AIC of Ukraine", 585 diplomas, 65 certificates and 324 gratitude papers.

So we have much to be proud of and what to show. And it is not a shame to show it to the general public, the way we did it with international accreditation by the U.S. educational standards, the first phase of which has been successfully completed.

– *Thank you for the interview.*

*Interviewed I.Bilous*

## SYSTEM OF NULES OF UKRAINE

## TSI of veterinary medicine, quality and safety of animal products

**Academician M.I. Tsvilikhovskiy  
Director of TSI:**

History of the Institute of veterinary medicine and the quality and safety of animal products begins with the agricultural department of the Kyiv Polytechnic Institute, where in 1920 a veterinary faculty was opened. Ever since the Institute has trained more than 10,000 doctors in veterinary medicine, including more than 700 foreigners for 89 countries.

Kyiv training school of veterinary medicine doctors gave a plead of world known scientists and producers, including the hero of Ukraine, Rector of NULES of Ukraine, Academician of NAS and NAAS of Ukraine D.O. Melnychuk; heroes of Ukraine, the Director of the Biochemistry institute named after O.V. Palladin of NAS of Ukraine, Academician of NAS of Ukraine M.F. Gulyi; Director of the Zoology institute named after I.I. Schmalhausen of AS of UkrSSR, Academician V.H. Kasianenko; Academician of NAS of Ukraine, Director of the Institute of Molecular Biology and Genetics of NAS of Ukraine H.K. Matsuka; Academician of NAS of Ukraine, Director of the Institute of Hydrobiology of NAS of Ukraine V.D. Romanenko; Academician of NAS of Ukraine, the Director of the Institute of Microbiology and Virology named after D.K. Zabolotnyy of NAS of Ukraine V.S. Pidgorsky; Academician of AS of Byelorussian SSR H.S. Goreglyad; the Hero of Ukraine, director of the "Mayak" agro-firm of Cherkasy region M.S. Vasylichenko; Hero of Socialist Labor S.I. Stasenko; Academicians of NAAS of Ukraine A.I. Zaviriukha, H.O. Khmelnytskyi; Corresponding members of NAAS of Ukraine A.Y. Masurkevych, V.P. Ryzhenko, A.F. Obrazhey, S.D. Melnychuk; Head of the State Veterinary Service of UkrSSR S.R. Didovets; Heads of the State Veterinary and Phytosanitary

Service of Ukraine I.Y. Bisiuk and V.M. Horzheiev. About 150 graduates became PhDs and professors and about 1000 became candidates and associate professors.

Today, the Faculty of Veterinary Medicine trains more than 1300 students. This year, the Institute is replenished by other 401 students.

Currently, the scientific-training process in the Institute is provided by more than 100 instructors, including 26 doctors, professors, 13 academicians and corresponding members of NAS and NAAS of Ukraine and public Academies, more than 60 PhDs, associate professors. Among them there are academicians of NAAS of Ukraine H.O. Khmelnytskyi, V.O. Busol, Corresponding Member of NAAS of Ukraine M.O. Zakharenko, V.A. Yablonskyi, Professors S.K. Rudyk, V.Y. Lyubetskyi, V.B. Dukhnytskyi, O.M. Yakubchak, D.A. Zasielkin, N.M. Soroka, M.P. Prus, V.F. Halat and others.

The key to success of the Institute is the integration of the Veterinary Medicine faculty, SRI of Animal Health, TSC of Veterinary Medicine of productive, domestic and exotic animals and inter institutional TSC of animal biology and laboratory diagnostics of quality and safety of animal products, in the structure of which there are relevant chairs of fundamental and clinical training of students as well as several training and scientific- production units, including a clinic of veterinary medicine.

Faculty of Veterinary Medicine of the Institute is a member of many international organizations including the European Association for veterinary education institutions, the World Veterinary Association of Health protection of small animals, International Association of vet-students and others. Every year, about 50 of our students study and have practical training in Western Europe and the USA.

At present the priority directions of the Institute are creating the conditions that would promote training the highly qualified specialists in veterinary medicine who can successfully operate on the territory of the state, municipal or private veterinary services in Ukraine and abroad, actively introduce advanced achievements in ecology, bioethics and common culture; to increase the level of fundamental methods and results of applied research, popularization of achievements of native science, technology and culture, the introduction of new technologies into the practice of veterinary medicine; integration of veterinary education and research in the global educational environment, ensuring the principle of continuity of education in veterinary medicine through a targeted postgraduate training of specialists in different areas of their professional activities.

On the agenda there is implementation of major science and innovation project, which involves the creation of a training-scientific-production complex on the basis of three centers: molecular diagnostics of diseases and biotechnology in animal husbandry and veterinary medicine, Arbitration Centre of veterinary-sanitary examination of food and food products, hospital and clinical center of Veterinary Medicine. These centers are responsible for the development of molecular genetic methods for diagnosis of animal diseases and quality control, implementation of diagnostic test kits in industry, developing methods for rapid diagnostics, development and implementation of GIS in veterinary medicine, providing veterinary issues in emergency situations (accidents), organization and implementation of veterinary services, including in rural areas, providing postgraduate education and retraining of specialists of veterinary medicine in accordance with the labor market, scientific support Master programs, postgraduate and doctorate studies according to the international standards, etc.

The realization of this project provides a global result - creation of a reliable control system of animal health in a changing climate in the world, violations in eco-bio-systems, intensive migration of biological objects, significant export and import of animals, animal products, raw materials and food resources, determining food security in Ukraine.

**From the editor.** The outstanding event of the year in the life of the team of the Institute was the delivery of the State Prize of Ukraine in Science and Technology to the Director of the Institute, Academician M.I. Tsvilikhovskiy.



## NEWS FROM REGIONS

## Being proud of our history we are creating our future today

*In September 2013, the Crimean Agroindustrial College of NULES of Ukraine is marking 185 years since its foundation. Over the last half a century the educational institution has shaped as a modern, highly equipped educational system, training the highly qualified specialists for agro-industrial complex of Ukraine.*

*Read material on page 7.*



## SYSTEM OF NULES OF UKRAINE

## TSI of Forestry and Horticulture

**Professor P.I. Lakyda,  
Director of TSI:**

– Our Institute is a recognized leading center of the forest education. In its structure there are two faculties – Forestry and Horticulture and Landscape Architecture, Scientific-Research Institute of Forestry and Ornamental Horticulture, a botanical garden, four educational and research centers. The bases of practical training and scientific research of lecturers, postgraduate students and students are SS of NULES of Ukraine "Boyarka Forest Research Station" (at that time Boyarka Forest economy) was established in 1925, simultaneously with opening the Forest Engineering faculty at the Kyiv Agricultural Institute – as an academic, scientific and industrial base for training highly qualified specialists for the forest sector. Today Boyarka FRS is a modern, complex state enterprise that alongside its educational functions successfully combines a complex of works on reproduction, forest protection with wood processing. Now it is the only training company in the European territory, which has FSC™ certificate of forest management and internal supply chain.

We also have a wonderful botanical garden, which was created for preserving, studying, acclimatization, reproduction in specially created conditions and efficient economic use of rare and typical species of local and world flora, conducting the scientific and training-educative work. Today it combines in its structure the scientific-research subunits of three university institutes – Forestry and Horticulture, Plant Cultivation, Ecology and Biotechnology, Cattle Breeding and Water bio-resources. Botanical Garden is a part of the Board of botanical gardens and arboretums of Ukraine, and is an object of a natural-reserved fund of Ukraine of national importance.

The main areas of international cooperation of the Institute is to ensure implementation in Ukraine of priorities for transition to forest management and, in particular, creation and implementation of forest management technologies that ensure preservation of specific biodiversity in forests, development and implementation of forest certification and forest products, forest management informatization and GIS technology, evaluation of deposited carbon in the forests of Ukraine, etc. The main partners of the Institute is IIASA, EFI, Swedish University of Agricultural Sciences, Yale University, University of Vermont, Warsaw University of Life Sciences, Bureau of Forestry Seeding of Poland, Forest Tutorial Council, the Global Fire Monitoring Center.

In recent years, the staff of TSI of FH with support of the university leaders initiated a number of international projects for the development of scientific supply of forests protection from fires and reduction of fire danger in

of complex auditing the forest resources, research of biological productivity of forests and energy potential of forest plantations).

Separated subunit of NULES of Ukraine "Boyarka Forest Research Station" (at that time Boyarka Forest economy) was established in 1925, simultaneously with opening the Forest Engineering faculty at the Kyiv Agricultural Institute – as an academic, scientific and industrial base for training highly qualified specialists for the forest sector. Today Boyarka FRS is a modern, complex state enterprise that alongside its educational functions successfully combines a complex of works on reproduction, forest protection with wood processing. Now it is the only training company in the European territory, which has FSC™ certificate of forest management and internal supply chain.

The oldest in Ukraine and one of the oldest in Europe, Forestry Faculty of NULES of Ukraine has recently celebrated its 170th anniversary. During this time it was a member of various, mainly higher educational institutions, but it was training specialists for forest business. Today, the faculty consists of 8 chairs – of Forestry, Reforestation and Afforestation, Forest Biology and Hunting, Forest Melioration and Optimization of Forest-agricultural landscape, Forest management, Forest inventory and Forest management, Forest production technology, Wood technology.

Faculty of Horticulture and Landscape Architecture is relatively young – it's only twelve years old, and it has been already known all over the world. It consists of the chair of Dendrology and Forest Breeding, Landscape Agriculture and Landscape Construction, Ornamental Horticulture and Phytodesign.

Scientific work of staff is coordinated by the scientific-research Institute of Forestry and Ornamental horticulture. The work of its scientists is aimed at realization of fundamental and applied research on current issues of forest science, horticulture, wood technology and environmental protection. Within the frame of activity, SRI is presented by three main scientific schools: on forest cultivated business of Professor B.Y. Logginov (development of scientific bases of afforestation and reforestation), on forest melioration of Professor V.O. Bodrov (forestry method of drought soil erosion fighting), on forest inventory of Professor K.E. Nikitin (development of scientific and normative supply system

Ukraine, which has been guaranteed by the university leaders in this sector in Ukraine. In particular, since 2005, in cooperation with the State Agency for Management of exclusion zone of NULES of Ukraine the research of fire danger in the forests of an exclusion zone of Chernobyl NPP and a risk modeling of appearance of big fire that would lead to pollution of the territories by radionuclides, outside the exclusion zone and even outside Ukraine. To this work the world most authoritative educational and scientific institutions, such as the Global Institute of Sustainable Forest Management at Yale University and the U.S. Forest Service, the Global Fire Monitoring Center (Germany) which has the appropriate UN mandate, a number of international organizations – the Council of Europe, OSCE, have been involved in this work. Active financial support was provided by a Chopivskiy Family Foundation. This work was supported by the top management of Ukraine: funds for realization of research within the framework of the State Social Program of Fire Safety of Ukraine (2013-2015) were allocated. Financial support for solving this problem is also expected from the Global Environment Fund of the UN Environment Program (2014-2017).

During this collaboration NULES of Ukraine has received a Grant of the Black Sea Program of the European Union for scientific substantiation of measures aimed at preserving the unique forests of Yalta mountain forest reserve and reduction of its fire risk (2013-2015). For scientific supply of international projects in our institute the first in Ukraine scientific-research laboratory of forest pyrology has been created.

Large scales of natural fires that have been occurring in recent years, their significant impact on the population, economy and ecosystems require an active regional cooperation in this matter with the countries of the region. As part of its development NULES of Ukraine has created a Regional East European Centre of Fire Monitoring, which works in close collaboration with the Global Fire Monitoring Center. Our center will serve as a common platform that will encourage cooperation between government agencies responsible for fire safety in forests, scientific and educational institutions of the given area and civil society with common purpose – to enhance public safety and reduce the negative effects caused by natural fires in such regions as Byelarus, Poland, Moldova, the European part of Russia, Turkey and others.

Efforts of NULES of Ukraine in preventing extreme natural fires were highly appreciated at the international level. In particular, our colleague assistant professor S.V. Zibtev became a prize-winner of the Green Cross special award "GREEN STAR AWARD 2013".

Carrying on the University-based international scientific-research and practical conference allowed us to win a grant for the development of the forest administration national standard. While executing this project the national working group was functioning, its material and technical support

and organizational support being accomplished by the University. Thus, the University "de facto" was granted the status of the receiving organization for the initiatives for development of the independent international schemes of forest certification.

In Ukraine certification by the scheme of FSC – nongovernmental international noncommercial agency is widely used.

Due to scientific works of forest management chairs, forestry, forest biology and game management, in 2005-2012 development of methodological and information and consulting support of forest certification of forest industry enterprise was carried out. A monograph and two practical guidelines for forest certification were prepared and published. During this period the area of certificated forests in Ukraine increased nearly tenfold – from 143 thousand ha to 1301.8 thousand ha!

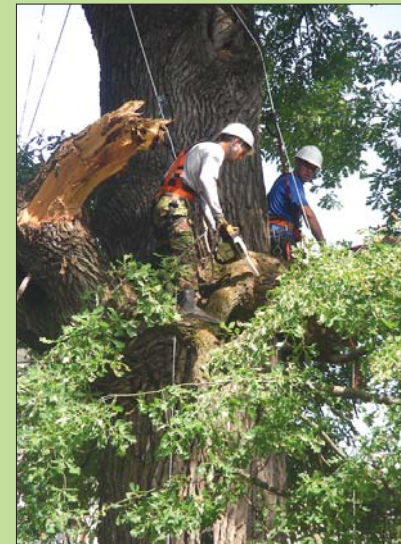
Institutional consolidation of forest certification has taken place. In

2007 duties of FSC contact person in Ukraine were executed by an assistant professor P.V. Kravets. In July 2011 our colleague was granted the status of a national representative of FSC in Ukraine, his office is situated in our academic building №1.

The University-based institutional development of international scheme of forest certification allowed moving to active implementing activities. For 2 years of the office existence, within the framework of supplying information and consulting services, the extra-budgetary fund of the University has attracted more than 150 thousand hvn, many international and All Ukrainian seminars, conferences and events on the development of forest certification as a market transition instrument of forestry to sustainable development have been held.

Experimental farms of the University have not been left aside. In 2010-2012 preparation to certification of Boyarka forest research station was conducted. In 2012 it - the first among similar farms in the CIS - has received a certificate, which certifies a fact of the high and internationally accepted level of forest management.

## The second life to the Oak of Academician Pohrebnyak



*On the initiative of the directorate of TSI of Forestry and Landscape Architecture and the chairs of landscape architecture and landscape construction a practical course on using modern methods of arboristic for treatment and sanitation of the nature monument – "Oak of Academician Pohrebnyak" was held.*

Practically all secular historical trees in the Hosiivskiy forest today are named after specific historical figures whose lives are somehow connected with this place. One of them is an

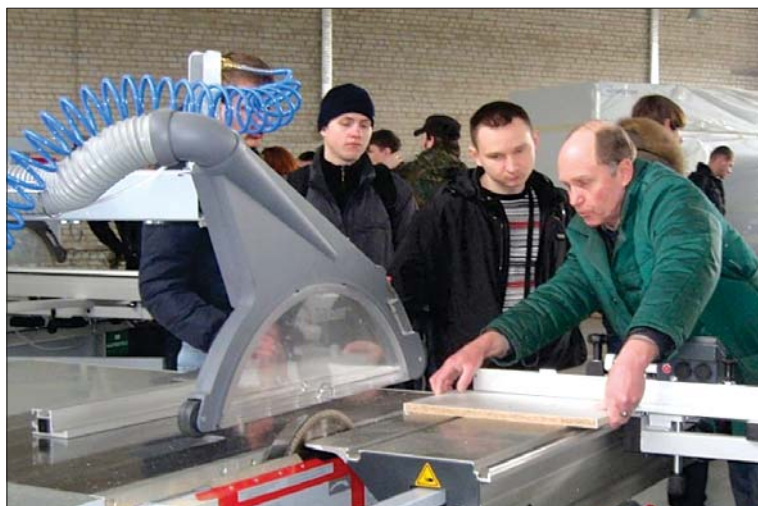
oak in the yard of the academic building №1, named by the members of TSI of forestry and landscape architecture "Oak of Academician Pohrebnyak". Previously one of the "wise heads" tried to name it after one of the communist leaders, who has nothing in common with the history of Hosiievo, but the name did not take root, giving in to the blessed memory of Academician P.S. Pohrebnyak.

Last winter this tree suffered from severe damages and required certain preservation works and putting it to the safe state for the sake of numerous visitors of this part of the University territory.

Specialists-arborists led by the graduate of the faculty of landscape architecture and gardening Ivan Kushnir demonstrated to students, co-workers and lecturers of TSI of forestry and landscape architecture and other structural subunits of the University modern methods of intussusceptions into the crowns of trees by means of mountaineering techniques and clipping technique, as well as training secular trees crowns purpose-designed manual and fuel-powered tools. Being a student Ivan was mastering these skills and technologies. It was in the course of practical training in a specialized firm "Park Lesny" (Poland).

In the nearest future it is planned to install a decorative fence around the oak and information board with information about life and career of academician P.S. Pohrebnyak (1900-1976) – outstanding Ukrainian scientist, developer of the forest typology, whose life was closely intertwined with our University. He was a head of the chairs of general forestry and forest pedology of the Ukrainian forest engineering institute, in parallel in 1946-1956 was heading the Institute of forestry (since 1954 – Institute of forest) of AS of Ukraine. Actually, under the windows of the forestry chair, headed by Petro Stepanovych for a long time, this ancient centuries-old oak is growing, reminding the successors that life is fleeting and memory is forever...

*A.Kushnir, O. Sukhanova,  
Assistant professors of the chair of landscape architecture and landscape construction*



## SYSTEM OF RULES OF UKRAINE

## Biosocial "tomorrow" of economics

The second half and especially the end of XX century are notable by rapid transformation processes towards "sustainable development" as a result of deepening the contradiction between the global development of society and the existing political, social and economic systems. These contradictions are expressed in dominance of the financial economies over the market one, demographic growth, stable unemployment, development of new technologies, energy and food safety and adverse climatic changes. In figures, this situation looks as follows (in accordance with officially available statistics data of 2005): the richest 20 percent consume 76.6% of all goods and services of global economy, and 20 percent of the poorest – 1.5% of global wealth. Structural correlation in Ukraine as follows: 5 percent of the richest people own 65% of wealth, 60% of the poor and poorest own 5% of total income, middle class which makes 35 percent owns 30% of the total national wealth.

The critical borderline of the situation under "this cannot be so any more!" and "how can it be different?" was a system crisis of 2008. The whole knowledgeable world has recognized that the current system (political, economic, social, demographic, etc.) has changed its face forever. And one of the main theses of the UN Declaration of Millennium, proclaimed in 2000, "Modern unstable patterns of production and consumption should be replaced to ensure the well-being of present and future generations", acquired acute relevance. As a result, such concepts as "sustainable development", "neo-institutional economy", "bioeconomy", "noospherology", "theory of marginal consumption" spilled out of tight scientific bodies and futuristic research of the Roman Club to a broad public discussion. On the other hand, business representatives, guided by classic "selfish" theories of Adam Smith and the "Pareto Optimum" and focusing on rapidly growing investment prospects for the projects of "sustainable development" in different grants from international foundations and organizations, actively began developing "biotechnological" markets, spontaneity and "unconscious" focusing on super-profit (excluding social and environmental components) which have only exacerbated global problems.

Together with business different Ukrainian scientific and institutional organizations guided by financially based requirements of international

community about implementation of sustainable development, are trying to develop their socio-economic model of the future society based on bio-economics. At present, the most active transformations towards biosocial economics take place in the agrarian and energy sectors of Ukraine, and they are caused by the rapid development of biotechnology. From the perspective of priorities of long-medium-period of national development, taking into account its economic, social and resource potential, the main areas of implementation of biotechnology include formation of biotechnology market of agricultural products and products of fermentation of industrial purpose and developing technologies that need governmental support, such as biogas and biofuels. Of course, the development of biotechnology provides a number of economic and environmental benefits, forms cross-sector linkages and provides sustainable development, but on the other hand, requires urgent solution of practical problems, the main of them raises staff provision. And if the need for qualified engineer and technical specialties (biotechnologist, virologists, agronomists, etc.) is provided by the current level of higher education, the training of administrative-economic employees needs structural transformation that provides poly-profile and orientation on economy-effective management, taking into account the condition and development of biological resources, sustainable natural resources (especially in the agricultural sector), saving the biodiversity on conditions of providing quality and safe life of people.

Agriculture, undoubtedly, is an important economic sector for any country as a mechanism of providing food security. In the national realities agricultural complex occupies leading business and strategic positions of development (as evidenced by the constant increase of the share of the agricultural sector in the national economy that even goes ahead metallurgy) and dominant here are the powerful agricultural holdings. It is they that set the tone of agricultural production, create new infrastructure and stimulate the work market in the regions facing the global financial markets and organize training centers for training and re-training of the personnel. This is because, how it's won't be oddly enough for many, the modern agro-industrial and the agricultural food sectors – are flagship in development of the most modern biotechnology and engineering, that constantly and rapidly changing and

require new skills and practices in their learning. The education of experts for them requires relevant modern laboratories and research facilities, computer centers with appropriate software, skills to optimize the combination of traditional with the latest one, the necessity to calculate the economic and environmental efficiency of such optimization, and the most important the formation the future leaders of the new approach to managing "sustainable" management, based on "green", "blue", "white" technologies with regard to quality of bio-resources, needs of facilities protection and safety of life. The training of professionals of such level need a powerful material and technical base, qualified scientific and educational workers, oriented on international experience and knowledgeable with domestic characteristics. Unfortunately, these conditions cannot be achieved in a short time even on the most progressive company base. A number of leading foreign universities have introduced a training program of experts in the field of bio-economy: Scottish University of Edinburgh, American state universities of Iowa and Michigan, Dutch University of Wageningen, the French University d'Evry-Val-d'Essonne, Australian University of New England. In Ukraine the first steps towards biosocial economy makes TSI of Business of National University of Life and Environmental Sciences of Ukraine. Thus, the scientific-research laboratory for research of bio-economic processes, respectively furnished and equipped with modern licensed software is already established. Researches and implementation study in conjunction with the international experience can prepare a scientific-methodological material, resulting the putting a new discipline – biosocial economy from the new academic year to prepare Bachelors. High qualification of teachers, their international collaboration with colleagues in research projects and training abroad, interaction Administration of the TSI with direct employers have made such step real and promising. Apogee of approval the biosocial economics to the public in the first place for students who are determined with future specialization, will be a powerful international Conference with the participation of scientists of leading U.S. universities, EU, Russia and Japan to be held on RULES of Ukraine base in November this year. Thus, despite the dire predictions in future and hard realities of the present, there is a great

## Training and Scientific Institute of Business

## TSI Director Professor A.D. Dibrova:

– In recent years, TSI of business successfully held the national accreditation examination in 4 specialties – "Economics of enterprise", "Accounting and audit", "Finance and Credit", "Management and Administration" and the area of "Management".

MTB is successfully developing – for the last year there were created a problematic science laboratory "Biosocial economics and environmental management" and 2 new training-scientific laboratories – management and bio-econometric office and datamining study-rooms. They are equipped with modern licensed software that allows investigating and organizing the training process on the level of world's leading universities.

Only in 2012-2013 the institute instructors had in-depth probation period in the Universities of Colorado, Ohio (USA) on an faculty exchange program, Warsaw University of Life Sciences, West Pomeranian University of Technology (Poland), Slovak Agricultural University (Nitra) – supported by the National Scholarship Program of the Slovak Republic, the Weihenstephan-Trisdorf University (Germany). Within the framework of scientific and technical cooperation between Ukraine and the Republic of Slovenia a joint research project "Modeling of financial system in agriculture." is being implemented.

The research component in the masters and researchers training has been strengthened. In particular, at the Faculty of Economics separate academic preparatory groups of the mentioned professionals have been formed: "Finance and Credit" specialty -scientific support of financial management and financial services for agribusiness, in specialty "Economics of enterprise" – ensuring sustainable development of agribusiness enterprises in conditions of economic instability globalization, in "Accounting and Audit" specialty – accounting, monitoring and analysis in management of agricultural enterprises.

In 2012-2013 academic year the students of TSI of Business have become winners of a number of Ukrainian Student Olympiads – in specialty "Accounting and Audit", The 4th International Scientific and Practical Conference "Current problems and prospects of developing accounting, analysis and control", All-Ukrainian Olympiads on marketing, contest of students' scientific works, etc.

In the new academic year our scientific research will focus on the biosocial economy development and environmental management, based on the innovation activity, the development and implementation of socio-economic models of the future development of society, based on bio-economy, theoretical and methodological foundations of rural development and further improvement of financial models of business planning methods in agricultural formations, etc. The research on entrepreneurship development in agriculture, economic feasibility of the effective use of different types of bioenergy in agriculture is continuing.

Now the key priorities for TSI of Business are preparing for international accreditation and national accreditation in such specialties as "Administrative Management" and "Marketing", licensing of "Exchange Activity", introduction of discipline "Specific categories" of a new master's level specialty – "Management of rural territories".

From the editor. In the new academic year time the students of the TSI Business for the first time in Ukraine are proposed a new course on biosocial economy.

hope that our young people will have a professional way in the future, and the next generation will be able to give correct and appropriate definition of the modern phenomena and processes that determine economic success of

general state and business in particular, but at the same time – revive confidence in our country and willingness to work, live and create with this country.

*Dibrova A.,  
Director of TSI of Business*

## Training Scientific Institute of Land Resources and Law

Professor V.I. Kurylo,  
TSI Director:

– This year Training Scientific Institute of Land Resources and Law has celebrated its 12th anniversary. Is this much or little? Probably, to answer this philosophical question we need to see what was and what is in it.

The history of the Institute began from the formation of the chairs' teaching staff. And the faculty of Land Management and Law faculty had only... one Doctor and several candidates of sciences, who provided teaching disciplines of specialty

training programs. At the same time, the educational building of the Institute was under repair, material and technical and library bases were forming, the highest EQL levels were licensed, teaching staff was strengthened, new chairs were set up. Today we already have 19 Doctors, Professors (including 11 full-time) and 58 candidates of sciences (5 full-time).

Powerful staff potential has allowed opening the postgraduate courses by the specialties "economics of nature management" and "environmental protection", "physical geogra-

phy, geophysics and landscape geochemistry", "land law", "agrarian law", "environmental law", "natural resources law", "administrative law and procedure", "financial law", "information law" and doctorate by the latter 3 specialties.

And, finally, the fundamental breakthrough in the sphere of scientific activity was the creation of specialized Academic Councils of doctoral theses defense in specialty "Economics of nature management and environmental protection" and candidate theses by two legal specialties.

Recently the powerful scientific schools have been created in the Institute – of professors D.S. Dobryak, V.M. Ermolenko, I.P. Kovalchuk, the author of these lines. Active and fruitful scientific and pedagogical activity of the group has brought widespread recognition of its achievements in the state. Over the last two years, our two colleagues got the honorary titles of Honored Figure of Science and Technology and Honored Lawyer of Ukraine. The award of Yaroslav the Wise was conferred on the creative team of the faculty of law under the

leadership of Professor V.M. Yermolenko, consisting of Professor V.I. Kurylo, Assistant Professor O.V. Hafurova, L.O. Pankova, O.Y. Piddubnyi for the best textbook "Agrarian Law of Ukraine".

So, summing up the achievements of the Institute, it is worth noting its stable confident progress in training and scientific, in innovation activity, that is confirmed by the contribution of the Institute's staff in the development and establishment of the national higher education and science.

## SYSTEM OF NULES OF UKRAINE

## Institute of Natural Sciences and Humanities

**Professor VA Kopilevych,  
Director of TSI:**

– The history of mankind is a lot of thoughts of the people, taught through life experience, ideas that are both the foundation for science and education. It is obvious that education reflects the advances in science and stimulates its relentless growth. At the same time it is difficult to disagree with the views of Professor of the Moscow Theological Academy, Deacon Andriy Kuraev, addressed to universities, science, university students, that "...natural-scientific model of knowledge is not the only form of rationality in science, knowledge may not only be mathematical or physical – it may be humanitarian, but rationality is rather determined by how a person handles a particular information coming to him/her, than what source this information comes from (laboratories, introspection, library, lectures)".

That is why in 2001, responding to challenges in the research and education sector, the University structure replenished with the Natural Sciences and Humanities Training-Scientific Institute, its main purpose being to enhance humanization and fundamental character of professional agricultural education, and in parallel it became one of the first steps towards a poly-profile University that directs its activity to quality of life.

Twelve year history of Natural and Humanitarian TSI would not have had such a dynamic and at the same time rational nature without the doubt of some the skeptics who expressed the feasibility of this institute in the agricultural university. However, all this is left in the past. The result is the current structure of the Institute, combining Scientific-research Institute of Natural Sciences and Humanities, Pedagogical Faculty, training and scientific centers for social sciences and humanities, philological, chemical, physical and mathematical sciences, and until recently, pedagogical techniques of evaluating the education quality. Now it all works due to 16 chairs, where 25 doctors and professors, 116 candidates of sciences and associate professors and 84 senior lecturers and assistants carry in wise, good and scientific findings.

The task posed to the Institute is strengthening the personnel, which is performed for the last 5 years through annual augmentation of the chairs faculty by 5-6 doctors and candidates of sciences. And soon it will be possible to report that almost all chairs faculty belong to the highest scientific category. To do this, the chairs of the TSC of socio-humanitarian, chemical, physical and mathematical sciences and the pedagogically-oriented chairs have doctoral and post-graduate courses, where 3 doctoral candidates and 55 graduate students get training.

Solving current problems posed to the TSI staff is contributed by the ideas and research directions, shaped and time-tested by the people in the second half of the XX century and within the framework of scientific schools which gained recognition not only in Ukraine but abroad as well: polarographic analysis of biogeo-

chemical objects by Professor E.M. Skobets, non-aqueous electrochemistry by Professor Y.Y. Horenbeyn, phosphate chemistry by Professor L.M. Schehrov, philosophical analysis of the system "man-nature-society" by Professor V.P. Klyuchnykov, historiography of scientific and staffing provision of the reforms in AIC by Professor L.Y. Berenshtein, social and political development of the Ukrainian village by Professor V.V. Horak, theory and methodology of professional education by Professor V.K. Sydorenko.

Pupils of these scientific schools both shape the TSI chairs and scientific subunits, and ensure implementation of large-scale scientific research on the public order. Thus, polarographic studies started in 1954, are now completed by the development of the second generation of precision analyzer of heavy metals and toxic elements in water, soil, plant material and state techniques of their measurement on the level of the best international standards (by the way, the scientific instrument engineering belongs to the tasks of research universities). One of the practical results of using the method of inverse-hrono-potential measurements is the successful implementation by the chair of analytical and bioinorganic chemistry and water quality, which will celebrate 90 years of its existence, the scientific program "Monitoring the quality and safety of water and industrial effluent treatment organization in rural areas," particularly important considering Ukraine's accession to the WTO.

The results of research of the scientific school of phosphate chemistry not only include training 2 doctors and 12 candidates of chemical sciences, but also the developing of more than 250 new methods to obtain solid ammonium phosphate minerals, double and triple phosphate compounds and development of technology of new types of fertilizers, premixes and stimulants, protected by invention patents, international certificates and specifications. The results of research in this area in 2012 were marked by the award of the President of Ukraine for young scientists.

Equally important are research findings in other areas that in the past five years have been reflected in significant achievements in way of 95 scientific monographs and 2,852 scientific and methodological articles, their topics can be mainly attributed to these pressing issues of our time.

The University science should not stand aside education and training of students, for their effectiveness is in combined character. That is why scientific search of the chairs of humanities, philology and teaching focus on the development and improvement of teaching methods, that in line with the European standards within the Bologna Declaration as to creating a dynamic stage system of training professionals, competency training, shaping the national and universal values, have been practically implemented in developing a new generation of textbooks and manuals issued in Ukrainian language approved by the Ministry of Education and Science of Ukraine, their number only in 2010-

2012 totaled 145. These are the editions on the blocks of disciplines on philosophy, political science, sociology, history, English, German, French language, culture, chemistry, mathematics, pedagogy, psychology, ethics, Latin, Ukrainian language, computer sciences, etc., which are now used by many universities of Ukraine.

The picture of activity and development of natural and humanitarian ESI would not have been complete without the pedagogical faculty, which in 2005 became a part of the Institute.

"Teachers are empowered to the extent, the Prime Ministers can only dream about" – Winston Churchill said, meaning not only a significant influence on the process of teachers on the processes of state development and establishment of civil society, but also a huge responsibility that rests upon them. As far back as in 1924, in the Kyiv Agricultural Institute was established an agro-pedagogical department for training agronomists-teachers, and in 1928 – a Cultural and Technical faculty, its strategic goal being the creation of culture of collective farming. Finally, in 1963 the Pedagogical faculty was founded to train teachers for specialized secondary agricultural educational establishments in Ukraine, Belarus and Moldova. This work without losing its relevance up today, is going on at the Pedagogical faculty as retraining specialists in the second higher education in "Professional Education" specialty, which allows to get qualifications of engineer and educator, economist, teacher, zooengineer-teacher, doctor of veterinary medicine-teacher, teacher-land manager. Moreover, since Ukraine has gained its independence the problems of training teachers for agricultural and environmental educational establishments intensified due to the fact, that very often in the universities teaching and educational functions are performed by the professionals without special pedagogical education, who may also have their specialty, but have inadequate knowledge base and skills in psychology, pedagogy, methodology and technology of training and education, are not familiar with the best teaching experience.

Experience shows that effective training of teachers for agricultural and environmental educational institutions can be and should be created only where professional agronomists, veterinarians, ecologists and other specialists of agricultural and environmental sectors are trained. It is here where the mission of the pedagogical faculty in the poly-profile University – NULES of Ukraine - is. Successful activity of the pedagogical faculty for over 50 years is provided by, except for the chairs of pedagogical orientation, others, which shape philological, social, humanitarian, cultural and natural components in accordance with national standards based on the best practices in education. Thus, for professional agricultural and environmental training has been created in the very beginning of our institute activity and acts the system of improving psychological and pedagogical competence of assistant professors, senior lecturers, associate professors and professors of technol-

ogy chairs by organizing the functioning of permanent research and teaching seminars, courses of teacher training, provision of advisory services for academic and educational work, management of educational activities, basics of general and developmental psychology, pedagogical skills, etc. In addition, the management of educational institutions of the corresponding profile requires a special type of managers- leaders who have broad outlook, positive life experience, possess an identified set of general managerial, leadership proper and specific qualities.

Taking this into account at the Pedagogical faculty in recent years, a system of training not just a pedagogue, but rather a pedagogue oriented to harmonious nature management, use of bio-resources, life quality provision has been created. In this regard, certain priorities are "social pedagogy" and specific categories "Pedagogy of higher education" and "Management of educational institution." By the way, specific categories for masters training in their essence are the elements of leading global technologies of lifelong learning, when bachelor of any professional area gets another preferred Master specialty. In such a way the U.S. research universities train, and not surprisingly NULES of Ukraine has begun the process of international accreditation in the U.S. Association SACSCOC.

The success of every educational specialty lies not only in its licensing or accreditation. In our case, each type of pedagogical training was accompanied by the creation of appropriate effective specialized chairs with highly skilled teaching staff, including 9 doctors and 25 candidates of pedagogical sciences. The chair of pedagogics, from the height of its 50 -year experience, takes care of specialties "Pedagogics of High School" and "Vocational training". For almost 20 years the activity of the chair of teaching methods and management of educational institutions aims to pass students the knowledge in the theory and methods of vocational training, management of agricultural and environmental educational establishments. Training Master in "Management of Educational Institution" is a challenge of the time when it became necessary to manage an institution that combines agricultural education, science and industry in the market conditions. The system of the Ministry of Agrarian Policy and Food of Ukraine includes 23 higher educational institutions of III-IV accreditation levels, 11 of them having the national status, and 118 have I-II accreditation levels, including 92 colleges and vocational schools within the agricultural university centers. In general agrarian education has more than 250,000 students. It is they whom hopes are set on as regards development of agricultural production. To meet the challenges of training such a number of professionals the highly skilled teachers-managers, who understand and will be considering in their educational activity the specificities of the future career of their pupils, are needed.

Moreover, at the present stage of our country development there is a



clear need of the state and society in training the social workers, called upon to provide all-round assistance, advisory support, to promote social protection, etc. Therefore, going with the times a chair of social pedagogy and information technologies in education has been created. The success of pedagogical specialties would not be complete without the chair of social work and psychology: now the need for a new specialty "Practical psychology" is exacerbated for agrosphere and ecosphere as the problem of village is very far from being solved. Five years ago the similar topicality of training experts in "Philology (translation)", specializing in agro-environmental sphere was implemented at the Pedagogical faculty.

The picture of training pedagogical workers would not be complete without its cultural content. Here, the TSI of Natural sciences and Humanities has found reserves, initiated back in the early '90s by the faculty of social professions, the chair of folk art and culture, and already for 10 years it is the chair of culture sciences. Its uniqueness is in the fact, that except for the teachers of disciplines of cultural cycle traditional for university education in Ukraine, it effectively employs true artists-teachers of creative disciplines that promotes spiritual and cultural formation of a student's personality. Here are a folk ensemble of songs and dances "Colos", people's brass band, folk theater "Berezi", studio of academic singing, girl's vocal group "Oktava" male vocal ensemble "Amero", academic choir, ensemble of ball dance "Charivnist", choreographic ensemble "Divoche Suzirja (Maiden constellation)", vocal-instrumental ensemble "Otav". Students have the opportunity to join the beautiful and musical greeting-hall "Zolota Lira (Golden Lyre)", circle of theater lovers "Melpomena", art studio "Holosiivska palitra", circles "Decorative Floral", "Charismatic speaker", "The Art of Serving", news studio "Ideal", cultural club "Our regions." An informal association of amateur women with an active lifestyle is a women's club "Harmony", which focuses its work on the recovery and restoration of historical relics, national traditions and customs, ideals and spiritual culture of the Ukrainian nation.

The postgraduate and doctoral courses for training scientific pedagogical staff of the highest qualification simultaneously function. Thus, practically a complete cycle of lifelong training and educating has been created: Bachelor – Specialist – Master – PhD – Associate Professor – Doctor of Sciences – Professor.

So the answer to a difficult question: "Where is a teacher for a farmer taught?" is simple: "Welcome to the National University of Life and Environmental Sciences of Ukraine."

## SYSTEM OF RULES OF UKRAINE

## Training and Scientific Institute of Live Stock Science and Water Bio-resources

**Professor V. V. Dzizyuk,  
Director of TSI:**

In September-October 2013, Ukraine has gained the right to host the 43th World Apimondia Congress – the International Federation of National Associations of beekeepers. It promises to be the biggest International industry congress in the history of Ukraine: it is expected that this event will attract to the Ukrainian capital approximately 12,000 participants and visitors from all over the world, many of them will be welcomed by the V.A. Nestervodskyi Beekeeping chair. Guild of mead-brewers of Ukraine held a chair-based competition of drinking honey. The revival of ancient traditions of noble use of honey and its products, which is

one of the unique features of beekeeping in Ukraine, was demonstrated here. The best examples of drinking (non-alcoholic) honeys were honored with awards and some Ukrainian mead-brewers were invited to similar events in Kazakhstan, Germany and other countries.

Ukraine is among the top five countries of the honey production. Ukraine became well-known in 1814 when the Ukrainian Petro Prokopovych invented the world's first collapsible frame hive. Today there are a number of research institutions that can be proud of their developments in this area; among them there is a V.A. Nestervodsky chair of beekeeping of TSI of livestock science and water bio-resources – the only one in Ukraine.

None of the higher educational institutions has such a chair that would be training specialists in beekeeping. Its scholars have created interbreed type of Ukrainian species of bees – Khmelnytskyi, the technology allowing to obtain breeding material by artificial insemination of queen bees. Therefore, artificial insemination is now used in beekeeping, too. So we have something to share with the international community.

An innovative project "Apitherapy" is implemented in the chair apiary based on using medicinal properties of bees for improving people's health.

–The other day a guest of our institute was a colleague from the Swiss Scientific Research Institute of Organic Agricultural Production Dr.

Florian Leiber – says the Head of the chair O. Losev. – His passion of our apiary had no bounds! Especially he liked the house for two hives, couches with inhaling windows that has therapeutic treating properties. This apitherapy is based on close human contact with bee families through micro-vibration massage, coming from the bee hive: negatively charged ions produced in bee flight and flowing down of electric charges from small hairs on the body of insects and inhalations of honey mixture, propolis and flower nectar.

Apart from the chair of apiculture 5 more chairs being a part of the faculty of technology of producing and processing animal products, train specialists, experts and analysts on live-

stock issues. Our second faculty of fishery numbers 3 chairs that train specialists in fishery.

More than 6000 specialists in livestock area and approximately 500 experts in fish farming – it is the number of young people that have already received their diplomas in our institute and its predecessors, which were a part of the UAA, and then Agricultural University. The interest in these professions, taught at our faculties, is felt not to be fading away. Today the Institute is training bachelors and masters for livestock and fishery in the training areas "Technology of producing and processing livestock products", "Water bio-resources and aqua-

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## TSI of Postgraduate Education

**Professor M.M. Kulayets,  
TSI Director:**

– *Maria Mykbaillina, why does the country need your Institute by and large?*

– Human resources, particularly personnel and administrative factor of production has always been determinant for economic development. Its value essentially rises in the transition periods of socio-economic development and especially in crisis situations, when you need to develop new approaches to organization and administration, which would meet the requirements not only of the present time but also the future of Ukraine. Therefore extremely important is settling the problem of increasing the efficiency of personnel management in agricultural establishments, on which the progress of production depends.

In conditions of economic crisis and cyclic nature of its repetition it is very important to have in the administrative structure, among directors and specialists of agro-industrial sectors the professionals who have knowledge to develop and realize the anti-crisis measures, implement modern technologies of growing crops, energy-saving, increasing efficiency of farming, etc. An important role in this is played by the system of advanced training of leading workers, AIC specialists, pedagogical and scientific-pedagogical workers of higher agricultural institutions of Ukraine. National University of life and environmental sciences of Ukraine plays a big role in it – the leading University in the country for training and giving advanced training for specialists in agro-industrial and environmental sectors. In its structure our TSI of postgraduate education functions. It organizes, coordinates and conducts training process of mastering professional skills of the AIC heads and specialists.

Having inherited from the former Ministry of Agriculture of Ukraine the Institute of post-graduate education of the AIC directors and specialists the University leaders have done everything to save the best traditions of the educational institution well-known in those times in Ukraine which gave advanced training to specialists in agro-industrial complex and to improve the style and methods of its work, to strengthen the material and technical base and human resources potential.

– *What are the basic directions of the work of the Institute?*

These are the advanced training of personnel and specialists of agro-industrial and environmental sectors, scientific-pedagogical and teaching staff of the institutions of higher education of I-IV accreditation levels, training and retraining specialists who receive the second higher education, training masters in the area of "State administration" of the specialty "Public service" and advisers, and advisers-experts.

– *Who is your main customer?*

The main customer of this kind of services is the Ministry of agrarian policy of Ukraine, which annually forms a time-schedule of advanced training for workers and specialists in the agro-industrial complex of Ukraine, worked out on the basis of the orders of the Ministry of Agricultural Policy of the Autonomous Republic the Crimea, the main departments of agro-industrial development of regional administrations and units at the Ministry.

The number of listeners – state officers, directors and specialists of agricultural enterprises, institutions and organizations in the area of "Public administration" makes 3 thousand people and by the areas (specialties) accredited in the University – 3650.

For example, only last year 4,654 students – state employees, managers and specialists of state enterprises and institutions, heads of villages and settlements, pedagogical and scientific-pedagogical personnel of the universities of Ukraine, heads and specialists of veterinary and phyto-sanitary service of Ukraine, managers and specialists of enterprises of non-state form of property got the advanced training here.

Master's program in speciality of "Public service" is popular among state employees. Not less actual in recent years have become the programs of obtaining the second higher education by way training and retraining by the accredited areas (specialties): is the better comment needed?

Important work area of the Institute is training and advanced training of advisers and experts-advisers. 769 people have been trained and passed their qualification exams for the right to implement extension services.

2012-2013 consolidated the positive tendency of the growth of indicators in the work of the Institute for the last six years, i.e. during the time during when the TSI of postgraduate education has been a part of the University and closely works with all of its TSIs. Thus, last year 18 academicians and corresponding members of the NAS and NAAS of Ukraine, 86 professors, Doctors of Sciences, 265 assistant professors and candidates of science, 198 highly qualified heads and specialists of the Ministry of Agricultural Policy and its departments were conducting advanced training.

The Institute authorities are continuously looking for opportunities to involve in training a wider range of listeners. This is, in the first turn, on-site classes directly on the ground – in universities, colleges, vocational schools of the agricultural education system.

As part of TSI postgraduate education an advanced training center for executives and specialists, pedagogical and scientific-pedagogical workers of agro-industrial and environmental sectors based on a state enterprise "NAU Frunze Training and Research Breeding Poultry Plant", has been created. Here poultry farmers, beekeepers, specialists of vegetable growing industry from the southern regions of Ukraine have an opportunity to improve their qualification.

Compared to 2011 the total number of revenues of extra-budgetary funds to a special fund of the University has increased by almost 700 thousand hvn and reached 7.6 million hvn. Average rate of changes in 2006-2012 is 152.3%. Earned funds are directed on the development of material and technical base of the University.

– *What training programs are the most popular?*

– The last decade more than 38,000 listeners were training under the advanced training programs. Moreover, positive dynamics of the number of managers, specialists, pedagogical and scientific – pedagogical workers is noticeable. If in 2003 the institute trained 3010 people, then in 2013 we are expecting 4300. That is, the need in improving qualification is stable for specialists of agrarian sphere. If in 2003 the training of listeners was carried out by 47 programs, then in 2012, 58 programs were proposed.

Of the greatest demand are the programs for such categories of students as the heads and deputy heads of veterinary medicine directorates in the regions and AR of Crimea, directorates of veterinary medicine in the cities and regions of Ukraine, directors, managers and leading doctors, chemists- toxicologists of regional (areal), municipal state veterinary medicine laboratories, etc., managers and specialists of territorial bodies of the State Land Committee of Ukraine, specialists of the State Agency of Land Resources of Ukraine, heads and their deputies, main specialists, managers of centers, state inspectors of the state plant quarantine inspection of Ukraine and state inspections of plant protection. The heads of village councils, experts in livestock industry and agricultural advisory services – advisers and experts-advisors, pedagogical and scientific-pedagogical workers of higher agrarian institutions of Ukraine I-IV accreditation levels, owners of private rural and farm economies, who provide services for rural green tourism are greatly interested in training. The popularity of these programs is provided first of all due to the fact, that RULES of Ukraine has the status of the research institution. Among 20 the most prestigious universities RULES of Ukraine over the last five years has been

occupying the 7-9th place in the nationwide rating.

– *What are the prospects for innovation activity in professional development?*

– A Center of advanced training for executives, professionals, pedagogical and scientific-pedagogical workers of agricultural and environmental sectors has been created as a part of TSI of Postgraduate Education. At the SE "NAU Frunze Training and Research Breeding Poultry Plant" annually about 500 qualified specialists of the Ukrainian poultry farms of different property forms, beekeepers and other categories of listeners from the southern regions of Ukraine improve their qualification.

More than a thousand pedagogical and scientific-pedagogical workers of higher agrarian institutions of Ukraine every year have an opportunity to improve their qualifications in the places.

The training-experimental farms of the university, where today full reconstruction of livestock buildings according to European standards is being conducted and where the latest technologies of growing and processing of agricultural products are being introduced, for the nearest future will become powerful bases for conducting outreach classes with the listeners of advanced training courses.

**And what is the opinion of the workers in charge who cooperate with TSI of Postgraduate Education?**

**O.V. Sen, Deputy Minister of Agrarian Policy and Food of Ukraine – head of the staff:**

– Ministry of Agrarian Policy and Food of Ukraine has high hopes for the TSI of Postgraduate Education of RULES of Ukraine regarding the implementation of lifelong learning programs and their introduction into agricultural production. The proper conditions for training and accommodation of students are created here. All this promotes increasing the number of students in TSI every year. The projects ordered by the agrarian business structures have become attractive.

**O.S. Kachnyi, Head of Kyiv Regional Council:**

– TSI of Postgraduate Education is truly a powerful subunit of improving qualification of leading officials and specialists, pedagogical and scientific-pedagogical workers of higher agrarian institutions of I-IV accreditation levels. We find mutual understanding, so in September and November of the current year on our initiative eight region of the area will host short-term seminars on improving the work of local self-government bodies. Very useful is the fact that the heads of village councils will visit together with the institute lecturers the committees of the Verkhovna Rada and will take part in parliamentary hearings relating the activities of local self-government bodies.

**SYSTEM OF NULES OF UKRAINE****Training and Scientific Institute of Live Stock Science and Water Bio-resources***End. Beginning on p. 6*

culture" and specialties "Technology of producing and processing livestock products", "Water bio-resources" of industrial and research specializations. Training process is provided by 92 lectures, including two academicians of NAAS of Ukraine and a corresponding member of NAS of Ukraine.

On the base of training and scientific laboratories basic and applied scientific research is conducted. TSI scientists engaged in selection and pedigree cattle business have developed theoretical foundations for saving a gene pool of local and disappearing animal species. Scholars and lectures of the P.D. Pshenychnyi chair of animal nutrition and feeding technology have developed methodological foundations of modern quality assessment of feed and animal ration nutrition with different technologies of livestock production. Lectures-geneticists of the M.A. Kravchenko chair of genetics, breeding and reproductive biotechnology of animals jointly with the Ukrainian Laboratory of Quality and Safety of Agricultural products investigate genetic structure at the DNA level of cattle, horses, ponies, sheep, pigs, fish and bees for developing the individual species and genetic passports of farm animals.

At the same time the institute is developing and implementing an innovative project of embryo-transfer in meet cattle breeding. Now cow beef productivity in Ukraine is about 45,000 (!), although the necessary minimum to ensure the needs of the population in beef at the level of physiological norm makes 1,5-2 million heads. Ukraine, especially its northern part, has all conditions for breeding specialized breeds of beef cattle productivity.

How to restore highly productive beef cattle breeding? It is expensive to buy pedigree young meat cattle breeds. But there is a solution: the use of modern methods of reproductive biotechnology – embryo transfer. Our institute has the following developments. In 2010-2012, in a training and experimental farm "Agronomic experimental Station" from transplanting the thawed embryos of animals breed of Aberdeen Angus 15 bulls and heifers were born (by the way, these embryos were purchased in Canada and for almost 30 years were stored in liquid nitrogen at low temperature).

Another pride of the Institute is the chair of horse breeding and livestock economy. Its structure includes a sport horse breeding center, created to develop and promote equestrian sport and its popularization among students. It has about 40 horses of nine species, including two pony breed. Every year the center holds competitions on the Darling Cup and Open Championship of NULES of Ukraine, which collect



the teams of sports associations of Kyiv and the regions of Ukraine. The horse equestrian center of the university jointly with a center of social protection of population is planning to hold a course of hippo-therapy sessions for children with disabilities. It will last for three months and will be conducted under individual programs under supervision of specialists and a physician-hippo-therapist.

Students get practical knowledge on breeding and rearing poultry in a training laboratory.

Institute also trains professionals for not less important industry – fish farming. Competition situation of last years testifies to the interest of young people in this specialty. Thus, in the current entrance company 497 applications were submitted on 50 places of state order. The peculiarity of training, unlike other universities, is that students reinforce their acquired theoretical knowledge in advanced fishery enterprises of Ukraine and the near and far abroad, which is extremely important in today's business environment. Strategic vision of training these professionals is giving them possibility to master modern world technology of breeding and raising carp, salmon, sturgeon and other species of fish during their internship abroad. Nearly half of them travel abroad, especially to Russia, which works hard to restore sturgeons in the Caspian Sea basin. The highlight of international cooperation is that our students are the only ones in Ukraine who have the ability to acquire practical knowledge of fishery in three-month set outs into the world ocean with the students of the Kaliningrad University in the famous sailing ship "Krusenstern". Today the agreements on cooperation and exchange of students from Astrakhan and Kaliningrad State Technical Universities, the Louis Pasteur National Lyceum (France) are enacted. Cooperation with the University of Louisiana, the Indian Agricultural University (Pantnanahar) is the matter of the nearest future.

Another promising project is ecological certification. This allows predicting the state of fauna and management of fish productivity in integrated purpose water reservoirs and conducting the preparation of environmental passports.

An obligatory element of practical training of specialists is training and technological practices that students go through in training and experimental farms of the University, the Kyiv racetrack, studs, Holosiivska training and experimental apiary, leading pedigree plants, breeding associations, selection centers in Ukraine, institutions of NAAS of Ukraine and leading farms.

**NEWS FROM REGIONS****Being proud of our history we are creating our future today**

The year 1964 became particularly significant in the history of the Crimean Agroindustrial College, when the educational institution moved from Yalta to Simferopol region to Malenke village to the base of the Crimean Experimental Station of Horticulture. Its construction and formation started on a waste ground. Human potential was always playing a decisive role, when sometimes even elementary things were lacking. Despite the difficulties the volume of training was steadily increasing, training and material base was improving. In 1966 the training of agronomists on plant protection started. In a year the Accounting department was moved from Yalta into Malenke village.

Almost 40 years the training process was headed by a very wise and responsible person E.A. Vernovskiy. Despite his deserved retirement Emmanuil Abramovych took an active part in life of our team, helping greatly with his advice and recommendations, met with students, he is also their mentor when they passed their technological practice in the farms of Germany.

Emmanuil Abramovych recalls, "The characteristic feature of our team is that we have never followed the time (haven't given ourselves to the will of waves), but strived to be ahead that would ensure the dynamics of the development of the educational institution and possibility to design the future."

Every decade of the contemporary historical stage has its own sense. In the 70's the educational institution was successfully developing: 4 more dormitories appeared, as well as educational building № 2, a sport complex, green spaces were arranged. The teaching staff was replenished with new lectures. Living conditions were improved. The dwelling of students became more comfortable due to the opening of the dormitory 7. Catering students became an integral part of the training process. New interesting traditions, achievements, success appeared in the life of the educational institution. All this testifies to the revival of the institution and its transformation.

For a short period of time the former Statefarm-college of the Crimean Experimental Station of Horticulture has achieved good results. In 1978 the College was awarded the Order of Labor Red Banner in honor of the 150th anniversary of its foundation and five years later it was on the Ukrainian board of honor. In the 90's the 3rd laboratory

building was built, computerization of training process started, international relations began to develop, cooperation with the Crimean Agricultural University was broadening, all the reasons to promote its status appeared, and in 1993 it was reorganized into a college with the II accreditation level. Taking into account the increasing role of banks in market economy in 1944 a specialization "Accounting in banks" was implemented, with its graduates having played a significant role in developing the banking system of Crimea and South of Ukraine.

The scientists of Crimean scientific-research institutions take an active part in training process, including 3 Doctors, 18 candidates of sciences who hold classes in their experimental grounds, supervise experimental work of students. The integration with SB of the "Crimean Agrotechnological University" of NULES of Ukraine on training-methodological and educative work was growing and in 1994 a training-industrial complex was created. Within its framework the best students continue their studies at the University and have the possibility to get full higher education in two-three years, training Bachelors in "Accounting and Auditing" specialty was improving.

New times bring new requirements. It was rather difficult for Vocational schools and colleges to function without reliable support. And in 2005 the former National Agrarian University (now NULES of Ukraine) lodged in its structure the Crimean agro-industrial college, which allowed enhancing prospects of the development of our educational institution.

Integration with institutes and chairs of NULES of Ukraine, implementation of grade education with faculties of TSI of Business and the Ukrainian TSI of Bio-resources Quality and Life Safety give an opportunity to train personnel according to the standards of high School. Systematic and fruitful work with the faculty and chairs of entomology, integrated plant protection, stock exchange activity, finance, land management design and others have been arranged, outreach classes of the College students to the NULES of Ukraine are arranged, too.

Due to financial support of the University in economic activity the college was able to receive autonomy in water and heat supply.

Today the model of the institution has already the features of a higher

educational establishment of IIIrd accreditation level, its list of specialties synthesizes great possibilities of integration with the faculties of base Universities and the prospects of improving the EQL of students. It is becoming possible due to correctly chosen direction of our major University, which is developing in order to optimize the grade system training and full use of the potential of the Universities of I-II accreditation levels in training Bachelors.

Now the training-educative process in the college is accomplished in 4 training buildings, 60 classrooms and laboratories, 6 dormitories. There is a great sports complex for physical training of the youth. There is a hall for 300 seats, a reading room and a library equipped with computers and office equipment for 160 seats, study-rooms and laboratories with the necessary equipment, training and methodological provision as required by the curriculum for all specialties.

Training-experimental farm of the College has more than 100 hectares of land, which provide practical training and organization of scientific-research work.

We have honored educators and honored instructors of Ukraine and the AR of Crimea, high achievers of agricultural education and science, education of Ukraine. Training staff has been considerably replenished with young instructors. Ten instructors are postgraduate students and seekers.

The number of students, especially bachelors, is gradually increasing and in 2014 it will approach 1000. The areas of training and specialties are optimized in the institutes and university faculties; therefore stage education is also growing. Research potential is actively developing. According to the decision of the University Academic Council we have corrected the areas and topics of scientific-research work related to the institutions in the region.

Especially I would like to mark the help of "CATU" SB and express gratitude to the university leaders for support in creating such college-based structural subunits departments as chairs. We already have two chairs in the college.

This is the way the college personnel celebrates the anniversary, on which we invite all our friends. And we have a lot of them...

*V. Sochenko,  
Director of College*

**OUR PEOPLE ABROAD****"Go round the center of Tokyo in Ukrainian national embroidered costumes – this is something incredible!"**

The Shibuya square is the most active crossroad of the world, crossed by 300,000 pedestrians during a day hasn't seen this before. In the center of Tokyo Ukrainian students from NULES of Ukraine, who are simultaneously studying in the Tokyo University of Agriculture held a parade of national embroidery, attended by over fifty people.

– Our move was supported by Belarusians and many Japanese ... in embroidered shirts and trousers, who, by the way, speak pretty good Ukrainian – says the graduate student of the Faculty of Agrobiosystems Engineering and TAC Nazariy Shkurupiy. – I've been studying in Tokyo for four years, and no longer wonder why the

Japanese show interest in the Ukrainian language and culture.

The feeling was unforgettable: to walk round the center of Tokyo, playing the national hymn of

Ukraine and wearing national clothes, to see the surprised and admiring glances of passers by who watched all this, is something incredible!..



## FAMOUS NAMES

## In the team of Academician Victor Hlushkov

*On August 24, an outstanding Ukrainian scientist, founder and director of the Institute of Cybernetics of NAS of Ukraine, Academician V.M. Hlushkov would have turned 90 years old. Our colleague - PhD, Professor of computer networks and telecommunications M.Vasyukhin is sharing his impressions about this person.*

With confidence I can say that everything I have achieved in my life in science, I owe the event that led me to the team of this remarkable man and determined all my life.

On April 12, 1961, Yuriy Haharin – in space. A few days later for the first time I heard the name of Victor Hlushkov. At that time I was the 3rd year student of Donetsk Polytechnic Institute, after which I was sent to work in a Scientific-research Institute of controlling calculating devices (Severodonetsk of Luhansk area), visited the assembly shop of the Severodonetsk instrument factory, where the first mass-produced in the USSR computer – "Promin" was assembled. It was then when I learned that it was developed under the guidance of Hlushkov in the Institute of Cybernetics of the Academy of Sciences of Ukraine. For me, yesterday graduate, it was a bit unusual to hear the word "cybernetics" in a positive context, as all handbooks and dictionaries of philosophy were writing that cybernetics was a bourgeois pseudoscience. More recently, being a student, I denounced this science at the philosophy seminars as a "reckless girl of imperialism." And my mind did not want to perceive somehow that the institution of this strange science – cybernetics – could give birth to such a wonderful thing as "Promin." With architecture and scientific-technical solutions of this device I happened to get acquainted after I got into a development department.

Of course, now we can talk about its flaws, small RAM, ROM, problems with peripherals and so on. But whatever it was, it showed us the genius of ideas of its founders, which was not only in how to do classical computers, but also that its shortcomings should be considered when designing future generations of machines. This concerned all components of the "Promin" device. It was for us, developers, like simulator, ground, and then the machine for engineering calculations.

I had to learn and apply three systems of an element base: ferrite-diode, pulse-potential and more promising – potential. So, the potential of the last one was proved through its use in a wide number of machines and systems, especially of the "Ural" series. The first information about the system we got from the report prepared by the Institute of Cybernetics co-workers V. Kalynchuk and S. Zabara. It several copies were passed by V.M. Hlushkov to a number of organizations in the country, including SRI UOM, where I was working then, and we were reading them out up to the "holes". Of course, being on business missions in our parent organization – the Institute of Automation, I could not but meet and talk, so to say "live" with the authors of this report. By the way the Institute of Cybernetics was close, then to the Agrarian Academy – in Velyka Kytaivska Street (now Prospekt Nauky).

Then in computing machines there were problems with creating the input-output devices, including high-speed with large screens. I just started to take part in the developing the station of graphic data indication, which later allowed to create a number of native video-systems and graphical grayscale displays.

Corresponding Member of the Academy of Sciences of Ukraine B.M. Malynovskiy proposed me to enter his postgraduate school. My supervisor was the head of the department V.P. Derkach – the first graduate student of V.M. Hlushkov in the Institute of Cybernetics (later Doctor of Technical Sciences, Professor, Honored Scientist of Ukraine, laureate of the State Prize of the USSR).

Postgraduate training flew away like a moment, but it was part of my life that was flourishing in the Department of Physical and technological foundations of cybernetics (FTFC). Subjects were diverse, but the overall vector was one: development of theoretical and applied problems of

creating components – the basis of computers and on its basis – the new principles of advanced machines and systems. Therefore, the department was complex, and this was determining its staffing: there were chemists, physicists, electrical engineers, radio operators, glassmakers, vacuum experts, programmers, system-engineers and even mechanics and fitters. Vitaliy Pavlovych organized work in such a way that everyone not only knew his long-term task, but short-term, operational tasks of the moment.

I personally got acquainted with Hlushkov by accident. Once Vitaliy Pavlovych told me that with Victor Mykhailovych they gave birth to an idea: to use symmetric semiconductor switches with memory (one of the FTFC developments) not only for switching electroluminescent cells for large mosaic screens, but also for various memory devices, including overwriting. The first work was the subject of the contract with SDKB LDI (which was located in the town of Zhukovskiy of Moscow area, where later Zoryane Mistechko appeared), the second work concerned memory for missiles and was carried out on the request of the Institute of Automation of the Ministry of Medium Machine Building.

Let me note that V.M. Hlushkov could select personnel in a good way. M.M. Amosov, I.D. Voitovych, V.P. Derkach, H.M. Dobrov, O.H. Ivakhnenko, V.I. Ivanenko, Y.V. Kapitonova, V.M. Kuntsevych, B.M. Malynovskiy, T.P. Marianovych, V.S. Mykhalevych, I.M. Molchanov, O.V. Palahin, I.V. Serhienko, V.I. Skurikhin, A.O. Stohniy, Z.L. Rabynovych, K.L. Yushchenko, N.Z. Shor – these are truly outstanding scholars who have made much in science.

V.M. Hlushkov often went abroad, and on returning, always made a report about his trip, shared his thoughts – and immediately gave orders, pointing at perspective developments. Such reports were made, usually in a large conference hall, which was always overcrowded. In his speeches he increasingly voiced the idea – to take advantages of Socialism by creating a state automated system of the national economy management, SAS for short, and for the Republic, a part of the Soviet Union – RAS.

He was completely captured by this problem. Visiting us in the department, sitting at the consoles of the machines Kyiv-67 and Kyiv-70, marking our success or criticizing for failures he was working through the tools of his grand idea – a systematic (or integrated) approach and its main stages: goal setting, parameterization, creation of management model, testing the model and re-correction of purposes, if the result was unsatisfactory. He was stressing that no automated system would work if the first system manager was incompetent. Therefore the "principle of the chief executive" was introduced.

His systematic approach V.M. Hlushkov was presenting in his lec-

tures at the chair of the Moscow Physics and Technology Institute, which was established on his initiative and now functions successfully within the walls of the Institute of Cybernetics.

One day after the lecture by Victor Mykhailovych, discussing his thoughts, I met a very bright person – Mykola Bychenko. Later he was charged with creating an unusual laboratory – a group of representatives of V.M. Hlushkov that is his assistants, capable of participating in developing the concepts, perspective strategies and the methods of creating SAS, and at the national level – RAS of UkrSSR. Doctors of Sciences were not fit for this purpose: they had already established their themes, groups, but young ambitious PhD – it is what was needed.

Much attention was paid to invariant model of sector system – the main way to unify its many links and reduce the cost of development. The curator of the laboratory was one of the deputy directors – A.O. Stohniy, Corresponding Member of the Academy of Sciences of Ukraine and Russia. Smart, energetic, sometimes harsh, but surprisingly polite, he was one of the "driving horses" of Viktor Mykhailovych (as he said of himself) and applied this term to us, the laboratory staff. But the Deputy Director of the Institute of Cybernetics Academician V.S. Mykhalevych jokingly called us young "candidates-villains" – for perseverance.

V.M. Hlushkov was holding conversations with us on tactics of behavior when performing tasks related to the subject. As an example, he said that he only the thirteen time got to the head of the Council of Ministers of the USSR O.M. Kosyhin to sign an important document. "If you are pushed out through the door, climb into the window. If you are pushed out into the window, climb in through the tube. Up to putting a cot at the administrator's of a leading person, who must sign your document. Always track the movement of this document. You always should know where and in what condition it is at the moment and whom its further advancement depends on. Only then you can achieve something" – these are almost his verbatim expressions.

V.M. Hlushkov told, "...In the 60's in our country all organizations were ill-equipped to perceiving the economic information processing. The fault was laying both on economists who calculated almost nothing, and the creators of ECM. As a result there was a situation when the statistics authorities and partly planning bodies were working on computing analytical machines of 1939 model that in America by that time had been completely replaced by ECM.

Until 1965 Americans had been developing two lines of computers: research (binary floating-point multi-bit machines), and economic machines (sequential binary-coded decimal with advanced memory, etc.).

Then they were combined in the machines of IBM Company. We had nothing to combine, because there were only machines for scientific computing, and no one was dealing with machines for the economy. The first thing I did then – tried to interest designers of "Ural-1" computer, computers of "Minsk" series in the necessity to develop new devices, oriented on economic applications. Machines of "Minsk" type appeared at the time when in Moscow for several years "BESM" computers were working, seven "Strila" computers, the first M-20 computers. Penza commercially produced small universal machines "Ural-1", Yerevan was completing the development of a semiconductor computer "Razdan" and the Institute of Cybernetics of the Academy of Sciences of the USSR was arranging the first model of a semiconductor computer "Dnipro". However, the "Minsk" practically didn't face with competition in the small general-purpose machines and quickly they became the leading type of such computers.

He also drew attention to the fact that in 1956, after finishing the first phase of creating the first computers a decree of the Council of Ministers of the USSR on the expansion of its production in the country was adopted. The construction of several plants manufacturing computers, their parts and components was foreseen, an enterprise in Minsk had to be one of them. The S.K. Ordzhonikidze Minsk computer plant combined in its walls all developing and manufacturing subunits. Similarly operated the Kyiv Institute of Cybernetics and plant UCM in developing the "Dnipro" devices. Such organizational and financial construction in the USSR was unique (at least in the industry that produced computers). It made it possible to combine the process of product development with preparation of its mass production that resulted in a significant reduction of the terms of launching the first new computers and the rapid growth of their production. In today's market economy the appropriateness of combining designer and manufacturer within an enterprise is obvious, but in the late 50s of the last century under the then existing economic mechanism it was not an easy task to implement such association. Decisive role in resolving conflicts between present day (production provision) and tomorrow (development of another product) was played by a proper policy that took the prospects of development into account.

Timing between the end of development (state tests), and the release of the party docking computer ("Minsk-1", "Minsk-22", "Minsk-23", "Minsk-32", ES-1020, ES-1022) ranged from one to three months. Design of the next model took less than two years, and the estimates of developments were record low: "Minsk-2" – 800 thousand rubles, "Minsk-23" – 1100 rubles, "Minsk-32" – 2200 rubles.

*End in the next issue*



V.M. Hlushkov at the control device of the Kyiv-70 machine