

Rome – Tomsk

A promising visit to Siberia

An Italian delegation, headed by professor Mariano Bizzarri (Italian Space Agency and Sapienza University), and composed by engineer Alessandro Palombo (Farnia Consulting) and doctor Stefano Serafini (International Society of Biourbanism), was invited by Tomsk State University, Siberia, Russian Federation, to give lectures and have talks, last September 4th to 10th.

Tomsk State University is one of the top 500 (over 20.000) universities in the world, according to QS World University Ranking 2011/12, while the city of Tomsk is the leading university and research centre of the whole Siberian region.

Professor Bizzarri has been the main speaker at the “International Scientific School on promising directions in Biophysics and Biotechnology” (<http://bioschool2011.tsu.ru>), and offered an interesting series of six lectures about Systems Biology, as a new scientific paradigm in Life Sciences. He especially focused on medical aspects in cancer care. More than 100 students and colleagues from scientific faculties attended the lessons, in the beautiful Aula Magna of the historical University.



Professor Sergey N. Kharlamov welcoming professor Mariano Bizzarri at the opening of the BioSchool in Tomsk



Opening session, Aula Magna, Tomsk State University

Engineer Palombo was invited to speak about computational analysis of images related to medicine, within a Systems Biology approach, and his conference dealt also with the organization of an operative computational analysis unit.

Doctor Serafini focused on the epistemological frame of Systems Biology, showing how it works also in Culturology, Linguistics, and Town planning. His lecture introduced the concept of Biourbanism to the auditory.

All lectures were concerned with Form as main subject and phenomenological scale to be dealt with, in order to effectively overcome the limits of linear reductionism models in science. They reflected Authors' share, in the frontier research undertaken at the Systems Biology Laboratory at Sapienza University of Rome, directed by professor Bizzarri (www.sbglab.org).

Russian colleagues giving lectures at the BioSchool were: professor Artem V. Demidenko, from the Institute of Physiology of Plants "K. A. Timirjaseva" of the Russian Academy of Sciences, Moscow, dealing with molecular biology, and the need for a common software language in Systems Biology; Aleksej L. Schavarda, professor of Physiology and Biochemistry at Sankt Petersburg State University, giving a lecture about practices in metabolical analysis for biotechnology; professor Elena V. Dejneko, from the Institute of Cytology and Genetics of the Siberian Branch of the Russian Academy of Sciences in Novosibirsk, who presented new technological solution for producing trans-genetic plants; professor Oleg L. Serov, also from Novosibirsk, on Citology issues.

Conference publication included several theses by young scholars, and the SBG Lab of Sapienza University contributed with 6 papers, 2 of them to be published by the University journal "Vestnik".

The Italian delegation offered also two lectures to the Faculty of Foreign Languages (the only Siberian Faculty with a chair in Italian Studies), after invitation by the dean, professor Svetlana K. Gural, and an interview to Regional TV.



Professor Bizzarri interviewed by Russian TV

Russian colleagues offered a very warm hospitality, according to the best Siberian tradition. Systems Biology approach and the applications carried on at Sapienza University, as presented by the Italian group, resulted of great interest for Russian scholars, who already have a deep background about systems thinking, thanks to the outstanding thought tradition about non-linearity, dating back to Authors such as Prigogine, Ljapunov, etc. Promising bases for future cooperation have been put down, during several official talks with the Faculty of Mathematics and Mechanics, in the person of professor Sergey N. Kharlamov who actively promoted the relationship with Sapienza University, and made a strong effort to organize the meeting, and the Institute's director professor Anatoly A. Glazunov; the Institute of Biology, directed by professor Sergey P. Kulizhskij, with a strong contribution by the vice rector for international affairs, professor Sergey N. Kirpotin; the Cancer Research Institute at the Siberian Branch of the Russian Academy of Medical Sciences, directed by professr Nadezda V. Cherdyntseva; the Research and Education Centre for Physics and Chemistry of High-Energy Systems, directed by professor Alexander D. Korotaev; the Regional Government Agency on Environmental Protection and Natural Resources, directed by professor Alexandr M. Adam, and his deputy, professor Alexander V. Dmitriev; the vice rector for informatization, professor Vladimir P. Demkin; and the international affairs coordinator of the Psychology Dept., professor

Olga Y. Bogdanova. Doctor Aleksandr Kuznetsov, president of the Young Scientists Association of Tomsk State University (an important organism, that has not equivalent in Italy) helped a lot with the organization.



Official meeting of the Italian delegation with Tomsk State University's Academic Authorities

Russian colleagues showed the results of their activities. Among them, it's worth quoting the interesting research managed by the Cancer Research Institute (whose director, professor Cherdyntseva, has been disciple of a master of multidisciplinary approach, the academician professor Nikolaj V. Vasilev) about repeated X ray pulses effects on cancer cells. Frequencies between 1 and 40 Hz (and especially 10, 13 and 16 Hz), obtain 99% of remission of mastocytoma (Herlick's carcinoma) in vitro, 30% in mice, without harming other cells, by inducing apoptosis and enhancing oxygen production. Institute's scholars, cooperating with Tomsk Polytechnic, developed a special instrument to carry on their experimentations. Both research and instrument are fitting with the Italian group's work, and it resulted very desirable to integrate our efforts also in technical development, as a complementary diagnostic device for 3D cells analysis has been designed in Italy.

Very interesting as such is the work carried on by the Regional Government Agency on Environmental Protection, and the Centre for Physics and Chemistry of High-Energy Systems. Both established in 1991, under very difficult social and economical conditions, these institutes represent excellent examples for the whole Russian Federation today, thanks to the efforts and the quality of their scientists.



The Italian delegation welcomed to the Cancer Research Institute of the Siberian Branch of the Russian Academy of Medical Sciences, by professor Nadezda V. Cherdyntseva, director



Professor Alexandr M. Adam, director of Regional Dept. of Natural Resources and Environmental Protection, pointing out the landing place of the historical relics hold by professor Bizzarri: a piece of Gagarin's soyyuz

Delegation enjoyed several visits to laboratories, and could note how university activity is strictly connected to real economy. The physico-chemical lab of the university, for example, produces 80% of its own funding by realizing and monitoring solutions for industries. Italians could appreciate the quality of self-made instruments and apparatus, next to last-generation ones bought in the international market.

Official talks have been carried on also with the City and Region Government. Italians have been invited to meet the mayor of Tomsk, Nikolay Nikolaychuk; the Vice Governor of Tomsk Region on Scientific-Technical and Innovation Policy and Education, Alexey P. Pushkarenko; the Head of Department for International and Regional Relations Alexey A. Stukanov. Talks were concerned with very practical issues, for improving scientific and economical relations between Italy and the Tomsk region. High appreciation about quality of life of Tomsk, including preservation of traditional, human-scale, and biophilic architecture and urbanism, has been expressed by Dr. Serafini to the mayor, who answered by stressing the effort to maintain Tomsk a pleasant and attractive place for the very economic resource of the city, i.e. students. The so called "Athens of Siberia" has actually 20% of its population formed by university students.



Eng. Alessandro Palombo, Dr. Stefano Serafini and Prof. Mariano Bizzarri during the meeting at the Tomsk Region Governatorate

Professor Palombo devoted half a day to a guided visit to the Special Economy Region, established in order to attract international investments and research, by very relevant tax exemption and economic concessions. He visited a chemical firm and an electronic device factory, getting back with a very good impression.



A moment of the welcome concert, Tomsk State University Auditorium

The visit of the delegation has been gladdened by a nice visit to the city, and to the notorious Botanical Garden, by gorgeous social dinners, and a wonderful concert, even by a beautiful sunny weather over a golden Autumn spreading over landscapes and gardens. But the most moving aspect of the travel belongs to the quality and friendship of Russian hosts, who introduced Italians to discover the scientific and human treasures of Siberia. It's sure that this is only the first step for a long and productive cooperation. We wish to receive soon colleagues and students from Tomsk to Rome. Do svidaniija!