



By Dragica Bošnjak  
DELO

# The Priority of Systematically Organised Cooperation in Research



Professional director of the Clinical Centre, Prof Dr Saša Marković, MD.



## Many common interests with the Clinical Centre in biomedicine

“Linking up with the Ljubljana Clinical Centre is part of the Jožef Stefan Institute’s work. In this way we want to bring our institute as close as possible to the local environment and at the same time jointly break through to the top European level. The association between IJS and the CC is based on our firm belief that Slovenia has great opportunities in research and development in the fields of health and biomedicine. To this end we are seeking to bring together physicians, natural scientists and various fields of technology in the common research, development and education sphere,” pointed out IJS director Prof Dr Jadran Lenarčič.

He added that the meeting was on a level of quality they had never had before between the two institutions. He took the view that “these two institutions, which are so very important for Slovenia, must bear the burden of developmental challenges and responsibility for scientific and technological advances in the field of medicine. I am entirely convinced that such shifts and technological breakthroughs are feasible. I myself see them in the synergies that are generated by links between the two institutions and, of course, later also in cooperation with successful Slovenian companies.”

“In order to step up the links between the two institutions, we intend to establish a joint scientific and research council to head and coordinate various research and development projects; one such opportunity, for example, is bidding for structural funds financing. We seek cooperation

in joint national and international projects, especially within the European Community’s 7th Framework Programme. We see a major opportunity here, since our advantage is an interdisciplinary approach and an interweaving of science with clinical practice. We wish to create the conditions for exchanging young researchers, and we wish to collaborate in acquiring common equipment and especially in the development of new specific equipment and in the development of new methods or apparatus for use in diagnostics and treatment.” Prof Lenarčič added that in view of the good experience with such talks, they would continue with issue-oriented and interdisciplinary meetings. Prof Lenarčič also sees good prospects for cooperation in setting up new, specialised institutes outside Ljubljana, perhaps in less developed municipalities.

We already have some experience in cooperation between physicians from the Clinical Centre and IJS researchers, but both groups know how difficult it was to coordinate, especially in terms of timetables, our desires with the needs and available capacities. There are most certainly enormous possibilities for joint research and development in the area of health and biomedicine, so of course we need to link up physicians and natural scientists and various technical fields in a common research, development and educational sphere. In this way the professional director of the Clinical Centre, Prof Dr Saša Markovič, MD and Prof Dr Jadran Lenarčič, director of the Jožef Stefan Institute in Ljubljana, confirmed the same thing in different words, not simply a common desire, but in line with the presentation of programmes and research fields, more specific plans for closer cooperation between the two institutions.

**Prof Dr Jadran Lenarčič, director of the Jožef Stefan Institute in Ljubljana.**

## Over 600 researchers registered at the CC

### Asst Prof Dr Ksenija Geršak, MD, on the scientific and research activities of the Ljubljana Clinical Centre:

A presentation of the whole range of activities in which physicians and associated experts from various specialised fields within the Ljubljana Clinical Centre (CC) conduct scientific and research work, given to a meeting of researchers at IJS, the heads of the university and others, undoubtedly confirmed the many common interests and the need for closer cooperation. For some time the CC has been preparing an overview of research work to date, and it is also striving to provide a better systemic framework for this field. The aim is for such activities to be as far as possible in line with the interests of the CC and not just of the individual researcher, who for this reason deals unnecessarily with a mass of additional problems. They have therefore already set up a special R&D unit and have started dealing systematically with these very issues. A part of this and – by way of introduction – particularly of the question of how scientific and research work at the CC is defined and regulated in formal legal terms, organisationally, financially and in all other respects, forms the subject of our conversation with Asst Prof Dr Ksenija Geršak, MD, assistant professional director of the CC for scientific and research activities.

The research work at the Clinical Centre is defined by its statutes. It extends to the performing of research within the framework of the healthcare plan and the national research programme. Research is carried out for domestic and foreign clients. Closely linked to this is the training of young researchers, providing mentors in research assignments, providing expert review work of proposals and results of research projects for various clients, and also organising scientific, research and expert meetings.

The scientific and research work of the CC is headed by the Research Council, which formulates guidelines for scientific and research activities, monitors the results, evaluates fulfilment of the



**Asst Prof Dr Ksenija Geršak, MD, assistant professional director of the CC for scientific and research activities.**

research programme, formulates initiatives and priorities for research and development projects and similar.

The financial resources for scientific and research work are provided through the Institute for Health Insurance of Slovenia (ZZZS) as part of its tertiary activities, and the CC also applies for budget funds in public tenders issued by the Slovenian Research Agency, while we also strive to obtain EU funds by applying to the relevant international tenders. In addition to the above, the relevant regulations also define scientific and research work for other external clients and cofinancers.

What is termed tertiary activity is a constituent part of the Sectoral Agreement for Hospitals with the ZZZS. This binds us contractually to ensure the provision of the highest expert level of healthcare, research, development and implementation of new knowledge in the fields of national pathology and the transfer of knowledge and skills to health workers and healthcare associates of all levels, and to formulate guidelines for the entire country or a significant part of the country. This tertiary programme of development and research covers: the development of methods and procedures from existing knowledge, for instance the transfer of new methods of treatment or diagnostics from abroad, basic research to solve national pathology

problems, the development and training of new research teams and so forth. All this involves active work with young researchers and mentorship for medical students doing master and doctoral degrees, as well as the participation of young doctors and other health personnel in clinical studies and so forth.

***In view of the fact that the Clinical Centre, as its title suggests, is for the most part a hospital institution, from which we expect top hospital services, can you tell us what proportion of their time can staff devote to the scientific and research activities that you mentioned – or rather what proportions would be ideal?***

In a university hospital this proportion should represent up to 20 percent of the work. If we look at the proportion of work in terms of the financial resources of the CC together with tertiary research and development work, it is around 11 percent.

***At one time, when we were still in the common Yugoslav state, the Clinical Centre was a recognised and sought-after health institution. It had several excellent clinical fields that enjoyed fame and where health services were sought even by patients from abroad. Moreover the CC once also had the word “university” in its name. For some time it has no longer had this designation, but it will supposedly reacquire it. Under what criteria and in comparison with which European clinical institutions can it reacquire that title?***

The CC has again requested the return of its university title. Since we meet the criteria, the university agrees with this, but we still need an amendment to the founding act, which as we speak is still in the process of adoption in the government. Since this involves professional activities, I should point out that the CC still provides education for numerous physicians from the former Yugoslavia. Via the Ministry of Health we are cooperating officially with the Republic of Montenegro, and talks are currently in progress for the formalisation of such cooperation with Bosnia and Herzegovina. And we are still receiving patients for treatment from the former Yugoslav republics, although less than previously. The reason for this is the poor financial situation in those countries. EU accreditation is currently underway in the area of postgraduate education,

and four clinical departments at the CC have already been officially accredited as European teaching centres. A comparison of hospital work and results is only just being organised in Europe, along with a standardised accreditation of hospitals. At the CC itself right now we are performing benchmarking with two university hospitals abroad. The entire process of accreditation and hospital benchmarking in the EU is only just getting started.

***In order to achieve excellence in a clinic, it must necessarily be linked to relevant basic and clinical research work. Numerous clinical physicians are for this reason at the same time university professors. What formal legal, organisational, working and other conditions must be met for these popularly termed "amphibious" professors (and/or clinics) to be successful in both fields?***

With the well-known headaches over equipment and deficient infrastructure, over-employment and so forth, how can they perform high-quality clinical and teaching work, while at the same time being supposedly established researchers? In this connection one should also add the well-known problem of extensive tender "paperology", which, as they say, further exhausts those applying for international research projects. At the meeting at IJS an initiative was mentioned whereby several research institutions or individuals would create a joint so-called service activity to assist in tender applications.

Many of the things you mention in this question are highly complex. A comprehensive answer would require a thorough analysis, so for now I should limit myself to just a few numbers. At the Clinical Centre approximately 80 physician-researchers are at the same time educational staff at the University of Ljubljana Faculty of Medicine, covering basic pre-clinical and clinical subjects, while more than 150 staff are involved in the teaching process.

***Can you point out any especially interesting Slovenian and international projects or fields headed by physicians/researchers from the Clinical Centre – and have they been successfully concluded in the recent past, are they in progress or are you planning them?***

The CC performs research work in the field of medical disciplines: microbiol-



**Prof Dr Boris Turk, acting head of the biochemistry and molecular biology department.**

ogy and immunology, stomatology, neurobiology, human reproduction, cardiovascular medicine, and metabolic and hormonal disturbance.

Researchers are organised into 33 research groups allocated to the SPS Internal Clinic, SPS Surgical Clinic, SPS Paediatric Clinic, SPS Gynaecological Clinic, SPS Neurological Clinic, SPS Stomatological Clinic, the Infectious Diseases and Fever Clinic, the Nuclear Medicine Clinic, Eye Clinic, Dermatovenereological Clinic, Orthopaedic Clinic, the Radiology Institute, the Clinical Institute for Clinical Chemistry and Biochemistry, and the Clinical Institute for Occupational and Sports Medicine.

There are more than 600 registered researchers and more than 200 technical and professional staff. At this time they are involved in 51 projects within and outside the CC, both as project leaders and collaborators. The majority of projects (38) will be concluded in 2007, and just a few in 2008.

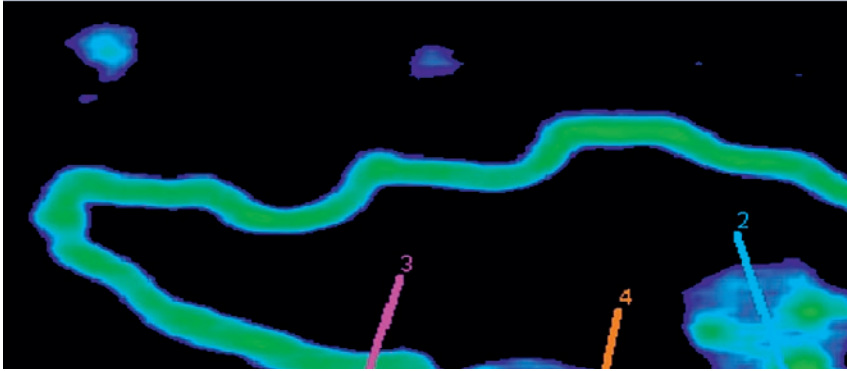
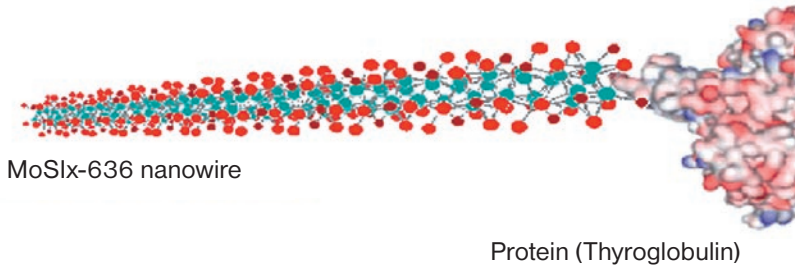
Parallel to this there are 15 programmes underway that will be concluded in 2008. We are also participating in five European projects, one of which we are leading. For all this we are drawing up a ten-year report. When this is completed, it will make available much

more data, including a great deal on the subjects you asked about, and this will undoubtedly be of interest both to experts and the general public.

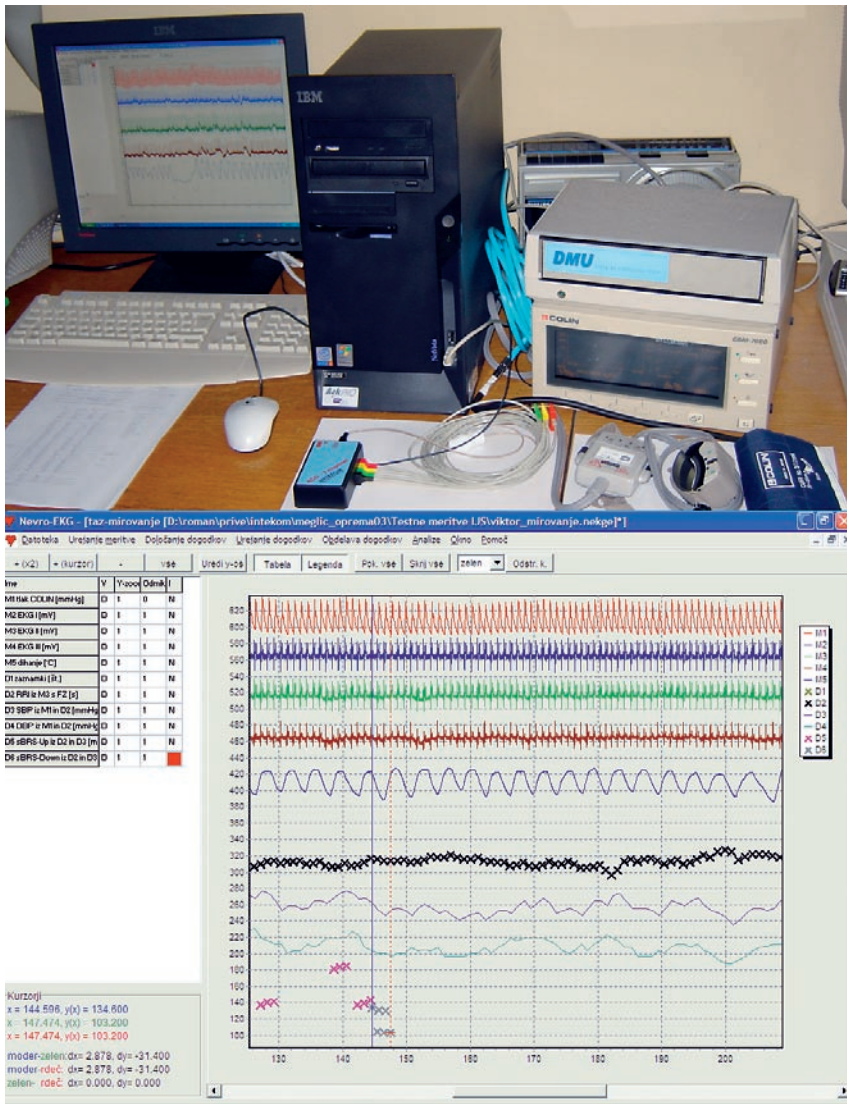
**Prof Dr Boris Turk, acting head of the biochemistry and molecular biology department:**

Modern medical research has outgrown its boundaries, so now we must speak of biomedical research. In short we no longer have just physicists, chemists or environmentalists, no longer just doctors with their clinical research, and in the same way we no longer have just biochemists with their basic research, but rather studies performed on complex systems. The complex system in this case is the human being and human health. One of the main findings here is that life expectancy is increasing, and with longer lives we are encountering diseases that are defined as diseases of the developed world. And the major share of financing is aimed precisely at their treatment and of course also at research intended for their treatment. We continue of course to have diseases of the developing world, for which less money is provided, although at least some of them, such as AIDS and malaria, which have come into contact with the developed world, have gained precedence on the international scale. In the past, clinical studies were performed on the basis of a specific number of patients and statistical data. But such clinical studies tell us nothing about the causes of disease, although your doctor will of course offer a diagnosis based on observation, for instance that you have inflamed eyes and are coughing, and prescribe treatment.

Successful treatment requires knowledge of the molecular mechanisms of illness. If we dwell for a moment just on the question of why we cannot cure all types of cancer in the same way, we can already obtain one of the answers on the molecular level: because each form of cancer has its own molecular source. Here at the actual level of proteins and communications between them there can arise short circuits, faulty communications, the consequence of which is illness. And a complex approach is required in order to study these processes. The development of methodology involves the cooperation of physicists, chemists



Schematic diagram of the connection of a nanowire and a protein (above), and an AFM image of the future biosensor with a MoSiX-636 nanowire (purple line) attached via a gold connector (orange line) to a protein (Thyroglobulin) (blue line)



NeuroEKG measuring device for simultaneous measurement of electrocardiogram signals, respiration and blood pressure (above), and the measured signals (below).

and physicians; in short, there is a clear need for a range of different skills.

In modern biomedicine efforts are focused on the earliest possible detection of disease. There are increasing numbers of screening tests, where we can speak of a kind of individual medicine, in short, it is important to evaluate the factors of risk that a person has as an individual, in other words the factors why that person might become ill earlier. We also want to use the most patient-friendly methods of investigation.

With regard to cooperation between the Jožef Stefan Institute and the Clinical Centre, we can say that this was established based on individual initiative. With an interest in joint research work, experts from the two institutions had the chance to collaborate. I personally do not have much experience in this field, but recently, that is in the last two years, I have been working with Prof Blaž Rozman of the Rheumatology Centre. We intend to strengthen this cooperation further. We are also collaborating in the field of orthopaedics with Valdoltra Orthopaedic Hospital. The role of the IJS experts is to attempt to determine the molecular mechanism, what takes place in the actual cartilage to cause wear, and why damage is caused – this is in osteoarthritis – and what the mechanism of inflammation is that triggers the whole process in rheumatoid arthritis.

Cooperation has also been set up in the area of osteoporosis, where new drugs based on protease inhibitors will bring a minor revolution to the method of treatment.

There are still opportunities open in the field of stomatology, in which we already collaborated a few years ago. We continue to be interested in the field of neurology, with which we come into frequent contact. Ninety percent of our more ambitiously conceived research is in the field of biomedicine, where we deal with the molecular mechanisms of disease. This demands knowledge of both the clinical profession and knowledge of molecular biology and cell biology. Exchanging experience from a variety of research is essential. The physicist will know his part, we the biochemists will know ours, while the physicians will have clinical observations or findings based on experience and their specific knowledge. If I might mention biosensors, we need someone to assess, for example, whether it involves a protein molecule, which then linked to a nanoparticle is still functionally active. A biochemist will know this. In short, a thorough in-

terweaving of different disciplines and branches is present.

Together with physicists, we are involved in a European project on safety on the nanotechnology level, the project Nano Safe II, which covers research on the harmfulness of nanoparticles, which are frequently found in cosmetics, and on the dangers posed by inhaling them, or rather in what doses these particles can be harmful. We are determining their toxicity on the cellular level. In animals we are studying how these nanoparticles are distributed around the body, and very importantly, whether the body then excretes them or whether they accumulate and affect health. The pharmaceutical industry is also involved in this area of research, although it is a few steps behind, but since it has increasingly strict criteria for determining all kinds of undesired effects on the body, it requires research on the effects of nanoparticles.

Nanoparticles are also involved in our work on cancerous cells. We use them as carriers of active substances that should arrive at the right location, and they can also function themselves as active substances. Some of the researchers in our department are also working on this kind of research. Cancer research is being conducted very intensively throughout the world, and a range of important findings have been assembled, but a range of important issues remain unexplained. Thus research is being conducted into why cancerous cells do not die, and consequently multiply unchecked. The question of why the usual mechanism on the basis of which the lifecycle of the cell is regulated has malfunctioned is still with us. A cancerous cell does not die like an ordinary cell and does not yield its place to a successor cell, but continues living. Clearly it has found some bypass and has skipped over the normal protection mechanisms. We can ascribe some of the reason for the failure of earlier research to a lack of knowledge of molecular diagnosis, which has been available to us more recently. The difficulty lies in the fact that there are numerous forms of cancer, each with their own molecular diagnosis, which we must in no way generalise, since the discovery of an individual mechanism for one type of cancer does not mean that it will be applicable to others. Some mechanisms are generally known, but it appears that the difficulty does not lie simply on this level, and a more complex issue is involved. Nevertheless, the discoveries of mechanisms on the molecular level



**Prof Dr Dragan Mihailović**

have significantly opened up the scope of our knowledge.

As I have already mentioned, cooperation between the Ljubljana Clinical Centre and the Jožef Stefan Institute has already been pursued on the individual level. Now we wish to establish this cooperation between the Clinical Centre and the Jožef Stefan Institute on a more integrated systemic organisational footing, although the Clinical Centre with its 500 researchers and the IJS with 700 researchers are like two big ships that require considerable time to shift to one side or the other, so a fair amount of water will still have to be crossed before we can actually place our cooperation on a systemic level. One possibility is to set up a joint scientific council, which will put together those people who wish to collaborate professionally with the other side.

### **Physics and Medicine**

#### **Prof Dr Dragan Mihailović:**

We know that in this century progress in medicine will be revolutionary, and

our physicists are therefore appropriately motivated to collaborate on joint research assignments with physicians from the Clinical Centre. Here it is worth mentioning especially that physics offers new methods that will be applicable in diagnostics and in understanding biological systems, while it also offers the advantage that the majority of the apparatus that physicists use for their own research can, with appropriate adaptation, also be used in medicine. We might mention just magnetic resonance and PET scanners.

Over the past decade we have encountered findings that biological systems are in fact quantum systems, and we are therefore attempting to understand the basic systems on a quantum level, in other words in the micro-world of individual atoms. Here there are important foundations that cannot be described by classical chemistry.

Furthermore we possess a range of new diagnostic methods that derive from physical measurements of experiments. For example, the use of optical spectroscopy can show how proteins age, as was recently researched in the case of human lenses. Here doubts arose concerning the valid explanations to date as to why the lens of the human eye ages. It appears that what was until recently accepted as the most probable explanation is not valid. Such things occur frequently in science, and in medicine there are a great many multidisciplinary possibilities.

The major activities of physicists at the Jožef Stefan Institute include work in the field of radiomedicine, the use and development of PET and magnetic (MRI) scanners and development of various entirely new methods in the laser surgery of teeth, eyes, skin and so forth. It makes sense to use the expertise that we offer in procuring new, expensive apparatus at the cutting edge of technology, which is highly effective in diagnostics, such as PET-CT or MR scanners, which cost several millions of euros.

Mention should also be made of the importance of physics in molecular medicine, especially nanotechnology, which represents a distinctly interdisciplinary field and in which the cooperation of physicists and physicians is essential. This is a very promising field. Great expectations, already highly justified, are tied to the introduction of nanotechnology for medical purposes. There is also great interest among students in the field of nanotechnology, which indicates a wider identification of the importance of this field.

**Asst Prof Dr Roman Trobec, representative of the electronics and information technology departments:**

The electronics and information technology departments at IJS, which cover automation, biocybernetics, robotics, management systems, open systems and networks, communication systems, know-how and intelligent systems, can cooperate with the Ljubljana Clinical Centre in various fields.

If you take, for instance, the work of the communication systems department, at first glance you would think that this has nothing in common with medicine, but that is not the case. Communication systems rely on the processing of signals, and signals in medicine are in fact the same – electrical biosignals – except that in the first case this involves the transfer of information via wireless links, and in the second case the transfer of information via live tissue, such as nerves or muscles.

Collaboration between the scientists in our department and the Clinical Centre was established ten years ago, specifically with the Clinical Centre's cardiovascular surgery staff, and special mention should be made of joint projects and the development of complex measuring apparatus to simulate cooling of the heart as well as the 64-channel measurement of surface ECG signals. Moreover our research has involved analysing heart signals in the human body and within the heart itself. We then established cooperation with the Neurology Clinic, in which we measure small changes in signals that result from the regulatory mechanisms in the human body such as ECG, breathing, pressure and so forth.

Staff at the electronics and information technology departments are technically educated experts with engineering skills in the fields of computing and electronics, while the Clinical Centre experts complement these skills with their expertise in medicine. We can therefore combine medical knowledge on the one hand with engineering on the other. There is therefore room for collaboration both in applied research and in jointly established pure research projects. This is also how we have worked together thus far. The results of our collaboration to date can be seen in the considerable numbers of measuring apparatus, clinical research, new procedures for measuring and processing signals and computer



**Asst Prof Dr Roman Trobec, representative of the electronics and information technology departments.**

simulations, which in the majority of cases is clear from the joint articles in the professional literature. Our experiences indicate that together we can delve into research fields that would otherwise be inaccessible for each of us individually.

A further advantage that we anticipate from cooperation between IJS and the Clinical Centre is raising the quality of work. Physicians should gain more time to collaborate with us, which is important since currently too much work on joint research is pushed outside their and our working hours, frequently into the evenings, Saturdays and Sundays.

We anticipate that cooperation should also provide benefits for researchers at the Jožef Stefan Institute, and perhaps some advantages in the evaluation of joint research assignments. At the Institute we are expected to provide applied research, which is evaluated on the basis of financial contracts with industrial companies, and with financially defined terms of agreement. However, the research we conduct with the researcher physicians from the Clinical Centre has no financial definition, at least not for the moment, even

though the research is both publicly applicable and publicly beneficial, and this should be appropriately quantified. In other words, when the agency came to assess such joint research by staff at the Jožef Stefan Institute and the Clinical Centre, it should place it, or at least the majority of it, in the category of public benefit.

The experts at the Jožef Stefan Institute have a great deal of theoretical knowledge and equipment, while the Clinical Centre physicians have their own knowledge and clinical experience. A great deal of the joint research is conducted on the basis of personal initiative and a belief in the importance of individual projects, but sooner or later the quality of work depends on the financing of individual research projects.

With high-quality joint research and research projects there is the ever-present issue of financing for these projects. What we desire is that such collaboration might also be supported by the Slovenian Research Agency, which currently separates medical research from natural sciences research, for instance through differing criteria for evaluating research results. Today we do not know what will happen when we act together, and we do not know whether this will be better or worse for the physicians or for us, since the issue of criteria has not yet been ironed out. In any event we anticipate and believe that the agency will encourage our collaboration.

Experiences at home and abroad undoubtedly indicate that computer technology is becoming increasingly important in medicine. Future cooperation between the two institutions with major scientific potential will be an increasing objective need, so we wish to collaborate even more with the Clinical Centre. Increasing importance will also be ascribed to treatment adapted to the individual, in contrast to what is for the most part today treatment of the "average" patient. Achieving this goal will require the use of computer simulation, in order for us to be able to envisage as far as possible the effects of various interventions on the individual patient. We anticipate that apart from anything else, in the future the Ljubljana Clinical Centre will become increasingly a research hospital. This kind of development will require the construction of a computer infrastructure, such as telemedicine, robotisation, equipping patients with various biosensors and monitoring their movement. In these fields the staff at the IJS electronics and information

technology departments have a great deal of knowledge and experience, and for this reason they should also be involved in the future development of the Clinical Centre.

**Dr Milena Horvat heads the environmental science department, and for the area of chemistry and the environment she has prepared a presentation on cooperation in progress and new prospects for cooperation:**

This meeting between the heads of the Jožef Stefan Institute and the Ljubljana Clinical Centre is not merely the result of goodwill, but was in fact needed, since some very important changes are required in Slovenia to protect health and the environment.

At IJS we have expertise in natural sciences, while the Ljubljana Clinical Centre's expertise is in medicine, and if our goal is to do something for human health then we need to be well organised. Regarding the current collaboration I would say primarily that it arose on the basis of personal initiative from individuals and their continued cooperation in research projects, with research assignments being carried out thus far either under the aegis of the Ministry of Science or within the current Slovenian Research Agency. There has, however, been no systematic approach to this collaboration, something urgently needed and already established on the European Union level, such that recently we have been able to see how we are idling along behind such organisational improvements. I am speaking about the fields of the environment and medicine, for which on the European Union level in 2003 a strategy was adopted that provides a basis for creating tenders for thematic research assignments. This will also be included in the priority areas of the 7th Framework Programme.

Included in the fields highlighted at this meeting was nanotechnology, especially since the EU is ascribing great importance to this through tendered research projects, and in order to be involved in these projects, Slovenia must pool all its potential in this field. At IJS there are biochemists as well as scientists from other fields of chemistry who can join in this kind of cooperation, but of course successful work in these research assignments also requires medical expertise and knowledge from the



**Prof Dr Milena Horvat heads the environmental science department.**

field of biology. Furthermore we are still finding that we do not know how to link together with this knowledge into what is called the public dimension of this field, such that we might create an appropriate environmental and health policy. If we wish to make a quality leap, we must create the kind of targeted research programmes that will be supported financially. In other words, we also need politically accepted orientations, otherwise research projects will not just be limited in the best possible case, but even rejected. For our field it is also true that European money from the framework programmes alone will be insufficient. Several ministries within the Slovenian Government need to be involved: the Ministry of the Environment and Spatial Planning, the Ministry of Health and the Ministry of the Economy. The first test will be in directing the flow of finances from EU structural funds. This will require a systemic decision and adaptation to global trends, and I believe that joining the European Union has given us better prospects in this sense. I also take the view that in Slovenia we will not know how to make use of avail-

able financing provided by the European Union via its tendered research assignments if we are not well organised within Slovenia. At the meeting we also talked about this, and several initiatives were tabled. What awaits us now is to make proposals that will draw our ministries to cooperate with us.

When we speak of cooperation on the level of institutions, I would also mention the cooperation between Slovenian researchers and the EU research centre at Ispra, which thematically covers everything in connection with health and the environment, and through a range of activities delves into the area of healthy food. Last year, representatives of the centre visited us at the Jožef Stefan Institute. We are due to return their visit. Of course these are not simply courtesy but working visits, and joint projects should be set up on the basis of initiatives from both sides, us and them, and here I can state simply that systematically established collaboration between the Ljubljana Clinical Centre and the Jožef Stefan Institute could provide both good ideas and the establishing of mixed research groups, which would ultimately be more easily incorporated into research projects. One such link in joint projects could therefore be with Ispra, with which, as stated, we are already collaborating.

There are indications of the possibility of joint research in the field of nanotechnology. I should also mention research in the area of neurotoxicology, where research involves numerous effects of the environment on the sensitive population group of newborn infants and children. This also involves studying the effect of substances on the nervous system, where we urgently require the collaboration of paediatricians and other fields of medical expertise.

A European Community project has been approved for the next five years that will involve 700 pregnant women and their children in Slovenia, primarily in the coastal area, around 700 in Italy, 200 in Croatia and 500 in Greece. This will be a major study. We talked about our cooperation in this project at the meeting with representatives of the paediatric clinic. We will also monitor the effects of large amounts of neurotoxic substances in children.

OF COURSE THERE IS STILL A WHOLE RANGE OF OTHER AREAS WHERE WE CAN LINK OUR KNOWLEDGE TOGETHER IN THE AREAS OF CHEMISTRY AND RADIOCHEMISTRY FOR THE REQUIREMENTS OF DIAGNOSTICS AND TREATMENT.