

40th anniversary
1964
2004

Trieste, 4-5 October, 2004 # 1

40TH ANNIVERSARY OF THE
ABDUS SALAM INTERNATIONAL
CENTRE FOR THEORETICAL PHYSICS

TRIESTE, 6 OCTOBER, 2004

2 ICTP + IBM A CUP HALF FULL
OR HALF EMPTY!

3 MOBILITY OF KNOWLEDGE,
TOOL AGAINST POVERTY

4 NEW TRAINING INSTITUTION
PLANNED
"MOBILITY OF KNOWLEDGE"

5 TRIESTE'S CAUTIOUS
OPTIMISM

6 THE MAN AND THE THEME

7 SPREADING SCIENCE IN
LATIN AMERICA

8 U.S. AGAINST TECHNOLOGY
TRANSFER - GALVÃO

10 NO DEVELOPMENT WITHOUT
SCIENCE AND TECHNOLOGY

11 ICTP HAILED AT 40

TERRAVIVA IS AN INDEPENDENT PUBLICATION OF IPS-
INTER PRESS SERVICE NEWS AGENCY,
IN CO-OPERATION WITH THE
ITALIAN MINISTRY OF FOREIGN AFFAIRS.
PUBLISHER: MARIO LUBETKIN, VIA PANISPERNA 287,
00184 ROME, ITALY.
WWW.IPSNEWS.NET WWW.IPSNOTICIAS.NET

Agreement in Trieste

First Class Science For Third World Needs



G-77 chairman Al-Nasser signing, observed by Claudio Marro and Paolo Budinich



Italy's Education Minister, Letizia Moratti

Italy, the Trieste Science system and the Group of 77 developing countries sign joint statement at Trieste's Science Park complex.

By 2015, the number of poor people in the world should be reduced by at least 50 per cent. Hunger should be halved. All children should have access to full primary education. Gender disparity should disappear in secondary education. It goes further.

Child mortality (for children under five) should be one third of what it was in 1990. Maternal mortality should be one fifth. The spread of HIV/AIDS should have begun to recede

continued on page 8 ►

Third world countries told

"Clean Up Your Own House First"

Ahmed Zewail, the 1999 Nobel laureate in chemistry, has a simple prescription for developing countries wishing to get a seat on the science and technology wagon: "Clean up your own house first."

Zewail, who holds the Linus Pauling chair at the prestigious California Institute of Technology, said too many countries in the developing world simply lacked the political will to invest in science and technology. All that was required was a simple belief by governments in the value of science and science education rather than any attempt to get into the atom or go into outer space, he said.



The four Nobel prize laureates: Zewail, Marcus, Kohn and Nash.

Zewail said third world countries were shooting themselves in the foot by a tendency towards bureaucratization

continued on page 8 ►

Cooling Nuclear Hot Heads

In today's hyper-charged world, any mention of theoretical physics immediately conjures up images of mushroom clouds.. Hence, the grim message from Mohamed El Baradei, Director General of the International Atomic Energy Agency (IAEA) reiterating that the basic research at his agency and at the ICTP should remain "balanced" while continuing to meet the increasing demands and aspirations of member states.

Baradei said, like the IAEA, the ICTP had a vital role to play in the management of scientific and nuclear knowledge that he described as "an emerging problem for both developed and developing countries alike."

Both the IAEA and the ICTP have sought to reach out and enable member states to take advantage of nuclear sciences and applications for sustainable development, but neither could prevent developing countries like India and Pakistan from testing nuclear devices and declaring themselves as nuclear-weapon states in 1998.

"In a world now full of sound-bites and over-simplification, the ICTP stands out for its disciplined promotion of critical, logical thinking in science, to the benefit of not only the scientific community but to humanity at large," Baradei said in a message that sounded more like a fervent wish.

ICTP + IBM A Cup Half Full or Half Empty?

Amid the congratulatory messages on the opening day, the sobering voice of Italy's Paolo Budinich, one of the founders of the ICTP rang loud and clear. "ICTP was an Utopia that came true but we had a much larger Utopia in mind," was how the grey eminence registered his frustration.

For Budinich, the Trieste System, built up with dedication over 40 years, was still nowhere near achieving its goal of cultural and political emancipation or of meeting the «sea of needs» of the developing countries.

"Forty years ago we were isolated with no friends but now when we have many powerful friends willing to help us (ranging from the U.S. Academy of Sciences and the G-77), the gap between the rich and the poor is still widening," said Budinich.

In case anyone had any doubts on the score Budinich chose to remind the delegates a motley mix of scientists, politicians and diplomats that there was a clear link between the "rage of poverty" and terrorism.

Somewhere a tremendous opportunity for peace that presented itself through the free transfer of knowledge and through the use of "what we already have" was being missed was his message.

Budinich wanted no less than a "relaunch" of the Trieste idea so that it could fill that gap between the haves and the have-nots of the world and thereby further the cause of peace in the world through science.

For Italy and Trieste, the gracious and generous hosts of the great Trieste experiment, there was a chance to be the leaders in the great adventure called human civilization by doing more of what they are already doing, Budinich urged.



Budinich: Founding father

3 MOBILITY OF KNOWLEDGE, TOOL AGAINST POVERTY



ICTP's Director K.R. Sreenivasan opening the international conference in Trieste.

The 40th anniversary observance of the Abdus Salam International Centre for Theoretical Physics began on a common theme by eminent scientists and statesmen: sci-

ence is vital for development and a key tool against poverty.

Italy's Undersecretary of Foreign Affairs and Senator Roberto Antonione minced no words at Monday's opening session.

Italy, he declared, was proud to be the host of the International Centre for Theoretical Physics (ICTP) and intended to go on supporting it.

What he wanted to know was whether other governments were prepared to join in an enterprise which, over the last 40 years, has trained over 100,000 top class scientists from the developing world.

A message from President Carlo Azeglio Ciampi said pretty much the same thing and dwelt on Italy's abiding belief in science and technology as a driving force for social and economic development. "Disseminating scientific know-how and technology has been the *raison d'être* of the 'Trieste System' from the outset."

"More than ever before higher education and research are acknowledged to be unique instruments to eradicate poverty and defeat underdevelopment," Ciampi said in his message.

The importance of Italy's unstinted support for the ICTP right from its inception was acknowledged by the Centre's director K.R. Sreenivasan and also borne out by other speakers.

The results, they said, were visible in the network of third world scientists who in many cases have become the nuclei for fine institutions in their own countries.

Yet, Walter Erdelen, Assistant Director General of the UNESCO, which along with the International Atomic Energy Agency (IAEA) funds the ICTP, had to remind delegates of the "deepening divide" between rich and poor nations which could yet defeat the goal of an equitable and sustainable future.

Ciampi and Antonione are backing the Trieste's bid to hold Expo 2008 precisely on the province's unique contribution to the ICTP and have proposed that the event has "Mobility of Knowledge" as its theme.

Jheeta Kuldip Singh, who specializes in Medical Physics, is ecstatic at being able to use the synchrotron facility at the ICTP. "This is the very latest in diagnostics and is a giant leap over existing techniques currently in use such as conventional X-ray and Magnetic Resonance Imaging (MRI)," Singh, who teaches at a medical college in Jaipur, India says, adding that the resolution and quality of synchrotron radiation imaging is so fine that it could pretty soon replace all other methods of peeping into the human body to see what ails it.

So far, the use of synchrotron radiation has been limited to the identification of materials rather than on the human body and Singh considers himself privileged to be able to work

CUTTING EDGE DIAGNOSTICS FOR THIRD WORLD DOCTORS

on equipment that will take awhile to make its appearance in developing countries.

"I got to be part of a group of 150 scientists that were given lectures by experts from several technologically advanced countries including the United States, Japan, Sweden and Canada," he says.

Another exciting area of the application of synchrotron radiation is in the precise treatment of cancerous tissue and Singh notes there is nowhere else but ICTP that a researcher from a third world country like himself could have been given a shot at using it.

Announcement by Italy's Environment minister, Alberto Matteoli

NEW TRAINING INSTITUTION PLANNED

Italy is establishing a new international institution to train experts and technicians for environmental protection. With headquarters in Trieste, the new unit would boost the city's chances of landing Expo 2008.

Named International Programme for Environmental Development (IPED), the body will have an initial financing of 1 million euro a year from the Italian Government.

The disclosure was made by Alberto Matteoli, Italian Minister for the Environment, at the first day of 40th anniversary observances of Abdus Salam International Centre for Theoretical Physics (ICTP).

"Environmental problems cannot be solved on a country-by-country basis," the Minister declared, underscoring the need for a training programme by a new international body.

According to Matteoli, ICTP will basically be a funding agency for training environmentalists in different parts of the world to boost "capacity building" and "know-how."

UN agencies such as UNESCO and UNEP will sit on the Board of the new agency, with Italy having a seat as the sole financial backers. Beneficiaries will also have their say in the programme. Matteoli assured that the Secretariat would be small, saying that the scope of IPED would be to disburse funds speedily "without useless bureaucratic structure."

Teachers would be from different parts of the world and courses would be scattered, too, according to the Minister.

Matteoli and other senior Italian officials said the establishment of IPED in Trieste would help the City's cause to host the Expo 2008, but not linked to it. IPED would use IRCP's facilities. ICTP Director K. R. Sreenuvasan welcomed the new programme and it fitted into the evolution of ICTP to respond to global changes.

The Italian Minister characterised IPED as "a window" offering an opportunity to governments and local communities in environmental training.



Roberto Antonione, Deputy Foreign Minister of Italy

"Mobility of Knowledge" reflects Trieste's Vision

I am pleased to convey through Terra Viva my best greetings and a sincere welcome to the many distinguished personalities from all over the world who came to Trieste on October 4-5 to celebrate the 40th anniversary of the International Centre for Theoretical Physics which was founded by the Pakistani Nobel Laureate, Professor Abdus Salam.

Among his many achievements Professor Salam is remembered today for his fight against brain drain, which deprived many developing countries from scores of scientists.

More than eighty thousand scholars, students and scientists from all over the world attended the ICTP and the other important international institutions that are part of the

"Trieste System". It is also through many of them that Trieste is today known abroad not only as the city of science and technology but as an international hub

where experience is being shared and guidance is provided.

The Italian Government takes pride in the fact that it never ceased to offer generous assistance to Trieste's institutions. In fact, this assistance has remarkably increased since last year when it was unanimously agreed that Trieste's bid to host the 2008 International Exposition would enjoy the full support of our Government.

The reason for this decision is to be found in the fact that the theme chosen for the Exposition, "Mobility of Knowledge", clearly reflects the scientific and technological vision projected by this city.

We believe that "Mobility of Knowledge" is a well-chosen theme; if it will prevail, along with many other positive sides of our candidacy, it will hugely benefit the institutions of Trieste and scientific and technological exchanges throughout the world.



Matteoli at a press conference in Trieste

5 TRIESTE'S CAUTIOUS OPTIMISM

With its old harbour, cultural and scientific wealth and strategic location, Trieste considers itself to have many advantages in its bid to host Expo 2008. The city is confident of emerging victorious, though a tough "open battle" is expected from competing cities, Zaragoza of Spain and Thessaloniki of Greece.

The Italian Government is waging a determined campaign on behalf of the bid, which will be decided in December. Some two million euros is being spent on promotion. Cabinet ministers are fanning out to far-flung capitals to lobby for support.

The city's plans and hopes for Expo 2008, were outlined during observances marking the 40th anniversary of Abdus Salam International Centre for Theoretical Physics (ICTP) on the slopes above Trieste's picturesque northern Adriatic seacoast.

Odds favour Trieste, according to assessment of those interviewed by TerraViva, although optimism is cautious.

"We are confident," Senator Roberto Antonione told TerraViva who, as Undersecretary of Foreign Affairs, coordinates Italy's global campaign. "I have criss-

crossed the globe and found no scepticism even among those who may not vote for us."

However, he shies away from describing Italy the favourite, saying it still is an "open battle" and that Italy still lacks the necessary votes of the 91-member International Bureau of Exhibitions that will choose the site in secret ballot in December.

The prize is big. The winner will put on a non-commercial international exhibition considered one of the major cultural events in the world. Trieste's proposed theme is 'Mobility of Knowledge', considered fascinating even more general than Zaragoza's 'Water' and Thessaloniki's 'Earth'.

Science and technology in motion and knowledge-sharing were very much in evidence as Trieste's Abdus Salam International Centre for Theoretical Physics (ICTP) observed its 40th anniversary. ICTP is but one of a slew of scientific units in and around Trieste.

During the anniversary observations, Italian Environment Minister Altero Matteoli, announced an Italian-financed and Trieste-based international body to fund training of future protectors of the environment across the globe.

"The two are not linked, but should help Trieste," he announced, adding: "We are receiving good feedback. We are confident."

In addition to its science park, what works in Trieste's favour is its location: it is neither too east (Thessaloniki) or too west (Zaragoza). Within a 1,000-kilometer radius, potential visitors from a host of Central, Eastern and Western European countries have easy access to the city. Indeed, Trieste considers itself the hub of the new Europe.

One of the rules of the Expo is that it should also provide an opportunity for rehabilitation – meaning the facilities used for the event should have uses later on. Trieste is offering to turn its Old Port—65 hectares in the city centre on the seafront – into a Congress Centre, with a Fair of the Sea, a complex for businesses, education, research, sports and port facilities.

The total cost: over 800 million euro. But, significantly, much of this will be recycled into the local economy through expenditure by an estimated 5 million visitors over a three month period during the summer of 2008.

Trieste considers its proposed theme, an exciting and innovative way of sharing knowledge for progress and helping reduce the gap between North and South, West and East. "Knowledge is power, knowledge is development," comments Senator Antonione.

Over 20 members of the Bureau of Exhibitions were also in Trieste during the 40th anniversary observances of the ICTP and heard the pitch of Italian and local government officials.

In talks with TerraViva, they shied away from disclosing their choice, if made already, and politely acknowledged that Trieste's presentation was complete and rich.

"It is possible that the best city may not win," remarked one Bureau member on condition that his name not be used. "One may have a better site and the other may have a better theme. The one who has the best package will get the Expo 2008."

Trieste sees its package second to none.



The Man and the Theme 6

The Man and the Theme made the finale of the 40th anniversary observances of the Abdus Salam International Centre for Theoretical Physics (ICTP) irresistible.

The Man is John F. Nash Jr., a Nobel laureate and an admitted delusional genius who has battled schizophrenia for a great part of his 76 years. His turbulent life inspired the Academy-award winner film "A Beautiful Mind."

And his theme, the last in a series of talks ranging from "Electronic Nearsightedness Matter" to "Vortex Interactions and the Finite-Time Singularity Problem", stood out simple: "An Interesting Equation."

But not so simple. Neither is The Man.

The Interesting Equation, he told a packed and bewildered audience, could be "Gab = Bab;s." To those who didn't grasp it, he said it involves "gravity, exponential factor, general relativity, transverse, gravitational, electromagnetic and compressional waves."

Or, he spoke gently, slowly and softly, "energy momentum tensor."

A few in the crowd may have possibly understood him, although many found him interesting. To one question on elaboration, he shot back: "Didn't get your question."

Understanding the person is not easier.

A mathematician, he shared the Nobel Prize in Economics in 1994 on a theme he began to develop as a graduate student at Princeton University. It spelled out "equilibria in the theory of non-cooperative games," guessing the other



Nash: An interesting equation

Oside in Games People Play or, as it is better known, "The Bargaining Problem."

But his struggle with nervous disorder had begun much earlier and dates back to 1959 when he was only 31, Nash told TerraViva in an interview. "As it happens to those dealing with logic, I was operating with false assumptions, like a pilot using a wrong chart." He was diagnosed as "schizophrenic" or "paranoid schizophrenic" and served time in mental institutions.

"People who study mathematics or logic are prone to becoming insane," he notes, adding that he slipped out of his delusional state largely on his own and succeeded to "think more rationally once again."

Nash said he harbors no resentment over the award winning film, although a PBS (U.S. Public Broadcasting System) documentary "A Brilliant Madness" is considered more akin to his tribulations.

He called the film "an artistic justice" and "a work of art that involves imagination."

If he had been irrational a good part of his life, he now analyzes his delusional state in a most rational and calm manner. He even addresses psychiatric association meetings.

Once on medication, he sees value in drugs, mainly preferred by family members fearing suicide by the mentally ill. "In the long runs," Nash adds, "they dull the brain and can suppress cognitive functions."

He calls mental institutions "not bad" but expensive along with psychiatrists.

Nash still appears reclusive and timid, but not for long. Even when an interview appears to have run its natural course, he opens up, taking time to make a general news journalist understand The Interesting Equation.

"It's about metric space time magnet and gravity.

The Man is easier to comprehend than The Theme.



A different perspective of things

7 SPREADING SCIENCE IN Latin America

Brazil is taking the lead in a project aimed at expanding the spread of scientific knowledge throughout Latin America. The country's National Council for Scientific and Technological Development, part of the Ministry of Science and Technology, has joined the ICTP to promote a series of science and maths workshops in the region in 2005 and 2007.

Erney Plessmann de Camargo, President of the Council, made the announcement at a press conference at the Abdus Salam center on Monday. He said half of the workshops will be held in Brazil and the

other half in other countries of Latin America. Eighty percent of the participants will be from Latin America. The others will be drawn from Europe and the USA.

ICTP director, K.R. Sreenivasan, who was present at the announcement, commented that the need for addressing the imbalance in the world regarding science, had not changed much over the last 40 years of the centre's existence. "A great deal still needs to be done in terms of collaboration – and one way of doing this is to create outposts of the ICP in different parts of the world, basically mirroring the example of ICT in Trieste," he said.

ICT and the CNPQ – National Council for Scientific and Technological Development –

will each provide USD 140,000 per year of financial support for the project.

De Camargo underlined the long-standing nature of the relationship between CNPQ and ICTP, which goes back several decades. Where previously Brazil sent students to the centre, now the relationship was being taken to another level.

Holding joint workshops and cooperating in this way in Latin America would take the relationship to a different level. "Science is taken very seriously in Brazil," says Jacob Palis, of the Instituto de Matematica Pura e Aplicada in Brazil, and Chairman of the ICTP Science Council. "By the government, and the educational institutions, and throughout the whole system."

He says science is one area in which the developed world should show responsibility to the developing countries – and knowledge of science is something that should be shared. "In Brazil, we share this knowledge with our neighbours, through cooperation, with countries like Ecuador and Bolivia, who may not have the same levels of expertise in this field. And I believe the world of science."

Italian Minister of the Environment, Altero Matteoli, who was also at the press conference, hailed the agreement. He described Brazil as one of the leading countries in the scientific field in Latin America.



Jacob Palis: "Look after young people".

U.S. Against Technology Transfer - Galvão

U.S. Opposes Technology Transfer says Brazilian scientist Ricardo Galvão, director of the Brazilian Centre for Physics Research thinks that scientists who chatter on about technology transfer at conferences are acting naïve. "The fact is that powerful countries like the United States actively oppose the transfer of front end technology." Galvão told IPS in an interview that earlier this year he had negotiated the import of a microwave reflectometer, that measures the density of gases and plasmas, from Portugal. "After the equipment failed to arrive for three months it was traced by the Portuguese institution that exported it to the United States which demanded to know why it was being sent to Brazil." It took three letters of assurance that the equipment was not meant for military purposes before it was released, Galvão said. There was history that kind of interference in the development of front end science in Brazil forcing the country to look to countries like India and China to develop its satellite programme. The U.S. has also been putting pressure on the International Atomic Energy Agency (IAEA) to inspect Brazil's indigenously developed ultracentrifuge used for uranium enrichment and find out the technology used on the pretext that it wanted to contain proliferation. "If they are serious about proliferation all they needed to do was monitor the entry and exit of enriched uranium into Brazil rather than pry into our technology in the name of security." Brazil, said Galvão was in the same situation as India and Iran which were capable of developing their own science but find stumbling block put in their way by the U.S.



The Panel



Dao and Zewail: Whispers at the top

◀ continued from page 8

and centralization noting that "scientists in some countries need the signature of a minister just to attend a conference."

Citing another instance of heavy handed bureaucracy working to kill science, Zewail recounted the story of a piece of high-tech equipment imported into a country where customs clearance took so long that the warranty expired. On top of that, science was to often mixed up with politics and even religion when all of three should be kept separate, he said.

Jacob Palis from the Institute of Pure and Applied Mathematic in Rio de Janeiro said the best strategy for third world countries by which to improve their prowess in science and technology was to "treat our young talent better and give them better emoluments and working conditions."

Palis pointed out that not only developing countries but even advanced countries like France and Germany were losing their best talent to the United States simply because of the value placed on science by that country.

The president of the Third World Academy of Sciences at Trieste, C.N.R. Rao, said more opportunities needed to be farmed out to young people. Although I am successful scientist I know that there are many brighter people in India who never got anywhere simply because they never had the opportunity," according to Rao.

The real aim, said Rao, should be in the direction of creating "scientific literacy" which in turn would help improve such desirable attitudes as tolerance towards other people's religion and general sophistication.

As a rebuttal, Bangladesh's Minister for Science and Technology A.M. Khan said it was all very well to talk about increasing the budgetary outlay on science and technology but the fact was that this was very difficult to do in countries such as his where on average people lived on less than a dollar a day.

Khan said he had difficulties persuading his colleagues in the government to invest more in science and technology because they were more interested in quick returns when "laboratories were not grocery shops.

ACKNOWLEDGEMENT

The publishers and staff of TerraViva would like to extend special thanks to K.R. Sreenivasan, Daniel Schaffer, Anna Triolo, Claudio Tuniz, Sabrina Visintin, the technicians, drivers, security guards, and the many other people at ICTP who have assisted us over the past few days.

, the incidence of malaria and other major diseases reversed, sustainable development policies enacted everywhere, and those without drinking water and sanitation reduced by 50 percent from current levels.

It also calls for trade to be open and non-discriminatory and for countries to be committed to good governance.

The above solemn commitments were adopted by world leaders when they signed the Millennium Declaration at the United Nations in New York, in September, 2000.

Italy's Education and Scientific Research minister, Letizia Moratti, thinks that achieving such goals requires a huge effort in filling the scientific and technological gap separating the world's most advanced countries from developing societies, mostly of the South.

Her presence at the signing of the joint statement between Italy, the Group of 77 developing countries and representatives of the Trieste Science system, she said, "has a precise meaning: the importance Italy gives to science and

technology as a tool to solve the problems the world is still facing, such as environmental degradation, poverty and disease."

She underlined the "long-standing tradition" of Trieste as a focal point of scientific cooperation between Italy and developing countries.

Close to 10,000 developing country scientists attend courses and research fellowships in Trieste's over 70 scientific agencies, of which the International Centre for Theoretical Physics (ICTP) is a pioneer, with 100,000 visitors, half of them from the so-called Third World, in its 40 years of existence. The ICTP now carries the name of its founder, Pakistani physicist Abdus Salam.

The joint statement was also signed by the G-77 chairman, ambassador Nassir Abdulaziz Al-Nasser, Italy's undersecretary of Foreign Affairs, Roberto Antonione, Cristina Pedicchio, president of Trieste's Science Park; physicist Paolo Budinich, one of ICTP's founders and head of the International Foundation of Trieste for the Progress and freedom of Science, and biologist Arturo Falaschi, head of

the Science for Development Trieste Agreement and former Director General of the International Centre for Genetic Engineering and Biotechnology.

The document states that "discussions were placed in the context of the implementation of the objectives of the Millennium Declaration, including the Millennium Development Goals, in particular those concerning sharing of science and technology and the filling of the technological gap."

"The contribution of the Italian authorities to the activities of the Trieste system, which focused on training of researchers originating from developing countries, was fully recognized," the text adds.

The G-77 chairman, however, made clear to TerraViva that the issue of supporting Trieste's candidacy to host the Expo 2008 was a bilateral matter between Italy and each one of the 92 countries represented at the Bureau of International Exhibitions (BIE) which will decide between Trieste, Zaragoza (Spain) and Thessaloniki (Greece) the competing parties.

For this reason, the joint statement refers to the candidacy by reiterating Italy's interest, and mentioning the theme chosen for Trieste 2008 - "Mobility of Knowledge" - saying this would "help reinforce the programme of training scholarships and courses for the period 2005-2009 through the institutes and centres of the Trieste system."

The G-77 did commit its support for "the initiative to convene an exhibition and a South-South Forum on science and technology in Trieste, with the support of the Trieste system, especially the Third World Academy," based at the ICTP facilities. Al-Nasser told TerraViva that this South-South exhibition would take place in 2006.

Paolo Budinich said this statement was the "first step" in a new kind of North-South cooperation through "ambitious, wonderful programmes." He stressed that developing-country scientists do not only attend courses and training in Trieste but hold also positions of management and control over some of the agencies.

"The Trieste system is not just a word, but a unique combination of science and research institutions" which puts science of the highest level at the service of development" in poorer countries, said Arturo Palaschi.

Head of the Science Park, Cristina Pedicchio, stressed that this complex has 55 hectares with two campuses exclusively devoted to "value change - the creation of knowledge - and the exchange and transfer, part of the meaning of the concept mobility."

She said, "technology transfer is essential to innovation and innovation is essential to development."

In similar vein, deputy foreign minister Antonione said filling the technological gap was "one of the most important aspects



Arturo Falaschi signs, flanked by Cristina Pedicchio

The chairman of the Group of 77 Ambassador Nassir Abdulaziz Al-Nasser believes that the future of developing nations is inextricably linked with the degree of progress achieved in the field of science and technology.

"In this age of rapid high technology—and the phenomenal growth of the information superhighway—we have to increase our efforts to provide our scientists with the tools to conduct research and keep pace with the day-to-day technical advancements," he said.

Ambassador Al-Nasser, who is also the Permanent Representative of Qatar to the United Nations, said the world is also witnessing a major breakthrough in information and communications technologies (ICT).

But unfortunately, he said, there is a ever-widening gap between developing and developed nations. "We have to narrow this digital divide."

In his interview with Terra Viva, the G-77 chairman singled out the International Centre for Theoretical Physics (ICTP) as one of the institutions that has provided Third World scientists with opportunities for extensive research in science and technology, including developments in physics and mathematics.

The ICTP's location in Trieste also transforms the city into an international centre of scientific excellence, he added.

"We need more such centres in order to foster scientific knowledge among developing nations," he said.

Ambassador Al-Nasser said the importance of science and



Mourad Ahmia, Nassir Abdulaziz Al-Nasser, Mario Lubetkin and Claudio Moreno

NO DEVELOPMENT WITHOUT SCIENCE AND TECHNOLOGY

technology for developing nations was clearly emphasised in the G-77 Havana Programme of Action adopted by heads of state at the South-South summit in Cuba in 2000.

"The Group of 77 is fully conscious of the importance of science and technology for the advancement of developing nations—and particularly the least developed countries (LDC), mostly from Africa," he added.

In the field of information technologies, he said, the ICT Task Force appointed by Secretary-

General Kofi Annan is seeking ways to develop new models of collaboration to advance the global effort to bridge the digital divide.

The Task Force is also facilitating the pooling of relevant experience of both developed and developing nations and the sharing of lessons learned in introducing and promoting ICT.

As pointed out by the Task Force, information and communications technologies have become the backbone of the global information economy

and has given rise to a new information society.

The future of our countries depends on scientific research as the key to the creation of knowledge and achievement of progress.

"We cannot afford to lose our scientists and physicists to the developed world. We have to provide them with the right environment to conduct their research," he said.

"We in the developing world cannot afford to be left behind in the race for technology," he added.

A ZERO MAKES A DIFFERENCE

In the Oct. 4-5 issue, TerraViva quoted ICTP's director, Dr. K.R. Sreenivasan, as saying, "Our roughly 10,000 visitors to-date..." In this case, the fact is that ICTP has had roughly 100,000 (one hundred thousand) students in its 40 years of existence. One missing zero makes a lot of a difference..

11 ICTP Hailed at 40

Speaker after speaker cited the centre for this pivotal role. There were also words of praise for the late founder the ICTP, Abdus Salam, for providing the vision and passion which has guided the center through 40 years.

Current ICTP director, K.R. Sreenivasan, promised that he and his staff would do everything to continue the Salam legacy – a task he acknowledged would be very difficult. He said there would be no change of policy or attitude by the ICTP. "What I learned when I came here is that science must be at the core of the center's activities, and that we must remain inclusive – in terms of the areas we cover, and the involvement of people. That is what we intend to do."

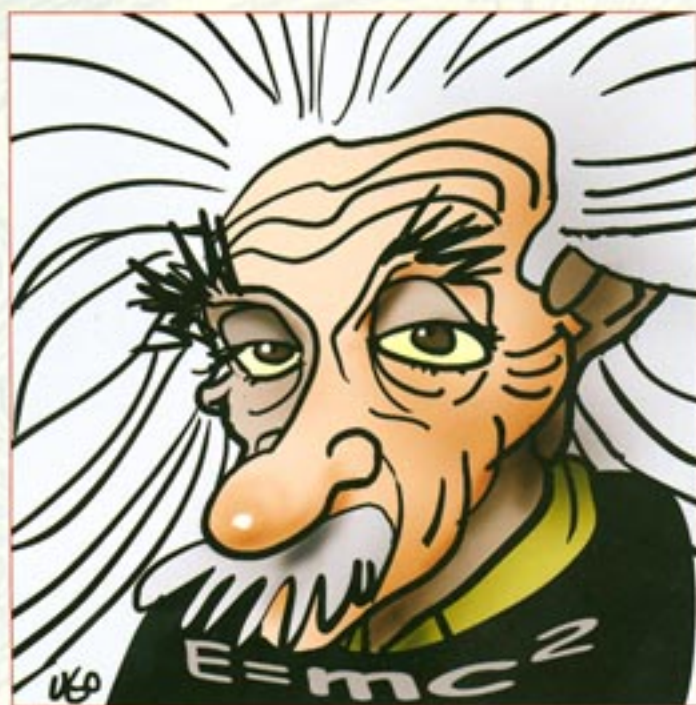
One of the keynote speakers, Jafar Towfighi Darian, Minister of Science, Research and Technology of Iran, said there was no doubt ICTP as a centre of excellence had played a significant role in science and technology development in the developing countries.

It had facilitated the transfer of science and technology between developed and developing worlds, and played a role in the development of these subjects in the South.

Iran itself had been helped by this cooperation. The number of science students had increased to 2.3 million, and was projected to grow by 3.5 million over the next five years. Further, the country had raised its expenditure on research and development (R&D) to three percent of gross domestic product (GDP).

Mayor of Trieste, Roberto Dipiazza, said the location of ICTP in the city was a symbol of Trieste's role as a center of scientific research. The centre's role in promoting cultural exchanges and contact between people of different backgrounds and cultures but who shared common values, had

As the 40th anniversary observances of the ICTP came to a close, the organization was widely praised for its role in promoting scientific cooperation between the developing and developed worlds, and for serving as catalyst for science and technology in the South.



been of immeasurable benefit to the city and region.

M. Shamsher Ali of Bangladesh, one of the centre's long-serving faculty members, recalled his own personal involvement with ICTP starting from the 1960's. Ali praised the role of Abdus Salam in guiding the development of so many young scientists, including himself, at an early, formative stage of his career.

"The center has done a lot for me," he said, "and for the people of the developing world. It is a model of international cooperation. And I think it is now time for those of us who have benefited from it, to do something for ICTP in whatever way we can."

Professor Ricardo Galvão, representing Brazil, praised ICTP's role in the development of science and technology in Latin America. He said more than 100 Brazilian students had benefited from courses at the centre since its inception. In addition, the late Dr. Salam had established personal and professional relationships with Brazilian colleagues which had aided in no small measure the growth of science and technology in that South American nation.

Spenta Wadia, representing India, said there was a strong, long-standing participation by Indian scientists in the centre over the years. He spoke of his own experiences as a student influenced by Dr. Salam. "One of Professor Salam's ideas

was that historically, knowledge had flowed from East to West, and one of the good things about this centre, is that we, as scientists from the developing world, have been able to deal on equal terms with our counterparts from the West. Salam provided the ICTP as a platform to make that possible."

Dr. Yu Lu, a long-standing staff member of the center who has since returned to China, said one of the compelling things about science was that it could not be developed in isolation. "That is why I've returned to China to help younger colleagues. It is a hard task, like climbing a mountain. And for that you need a lot of stamina, which is one of the things Salam taught us."

Professor Gabriel Olalere Ajayi of Nigeria, speaking on behalf of Africa, said the help received by the continent from ICTP was invaluable. "Thanks to the vision of Dr. Salam, young scientists from Africa have been able to develop their academic careers, especially at a time when science was a bad word and scientists were neglected." He mentioned in particular the setting up of a National Maths Centre in Nigeria.

Chairman of the Group of 77, Ambassador Nassir Abdullaziz Al-Nasser, said the Group of 77 and the Trieste System had always maintained an excellent working relationship, specifically through the Third World Academy of Sciences (TWAS).

"Both TWAS and ICTP deserve our support and appreciation," he said. "We do hope, very sincerely, that the Italian Authorities will provide further support especially to TWAS that is in urgent need of new headquarters in Trieste that could respond to the new needs of the Group of 77 for the preparations of the South-South forum on Science and Technology that will take place in Trieste in 2006."



Better Knowledge, Better Global Development

The presence of ICTP in Trieste adds to the international visibility of the city, says Riccardo Illy, President of northern Italy's Friuli-Venice-Giulia autonomous region. A successful bid for Expo 2008 would enhance this reputation – and draw more solid investment in advanced areas.

What is your assessment of ICTP's presence in Trieste?

If today Trieste can be considered an international science city, a reference point of global relevance due to its research activities, it is due, in great part to the ICTP. Just a few figures can prove it. Born in 1964, after an agreement between the Italian government and two United Nations agencies, ICTP was Trieste's first big scientific institution, in which, over 40 years, not less than 100,000 scientists have been trained, half of whom from developing countries. It has been ICTP's presence what has evidenced Trieste's potential as a science city, contributing to the creation of the Science Park area and to attract other scientific institutions such as the Synchrotron and the International Centre for genetic Engineering and Biotechnology (ICGEB).

How does the Region contribute to co-operation and solidarity programmes with developing countries?

For several years already the Region has put in place legislation by which development co-operation and international partnerships in specific sectors and areas of poorer countries are promoted and funded. Such agreements are usually managed by non-governmental organisations and they foresee as much involvement of civil society as possible, with poverty-alleviation and support of democracy and human rights as their main goals.

What activities is the autonomous Friuli-Venice-Giulia Region developing in support of the Science and Technology complex?

In 2003 the Region passed an important law on Innovation, which among other things created an Innovation Committee that includes representatives from the universities of Trieste

and Udine, scientific institutions, the private industrial sector and all development agencies operating in our Region in order to coordinate activities in this field. Substantial and growing financial resources back up this law: 15 million Euros in 2003 and 20 million in 2004. Beyond that, the Region has launched a 'Co-ordination Agreement' between the representatives of 34 international and domestic research institutions currently present in Friuli-Venezia-Giulia. Together with the Region, the agreement was signed by the ministries of Foreign Affairs, Education and University and Scientific Research. Through this alliance among research centres we aim at raising even greater funding and improving the efficacy of technology transfer to regional industry.

What positive effects do these research centres have vis a vis regional industry?

We are fully aware that one of the main competitive advantages of Friuli-Venice-Giulia is the very presence here of so many scientific research centres of international relevance. As a Region we have from the very outset aimed at linking research laboratories to business so as to increase productivity and hence help the regional economic system to face the challenges of globalisation and the transition from an industrial society to a knowledge society. The technological innovation law favours, particularly, closer contacts between universities and research centres on one hand and business on the other, through a network of 'technological poles' spread on the territory to ease technology transfer, thus directly taking scientists and technology experts into companies.

What could possibly Expo 2008 influence the consolidation of Friuli-Venice-Giulia as a world-class pole of excellence in 'Mobility of Knowledge'?

Recently, the reputed bimonthly 'Foreign Direct Investment', published by the 'Financial Times' editorial group has defined Friuli-Venice-Giulia as 'Italy's region of the future', in the context of a wide survey conducted among 140 European cities and regions from the perspective of foreign investment conditions. Apart from the region's industrial base and its quality of life, the analysts have above all considered the presence of two top universities and a number of international research centres. Should Trieste succeed in its bid for Expo 2008, for which the theme 'Mobility of Knowledge' was chosen, Friuli-Venice-Giulia would gain such international visibility as to attract solid investment in the most advanced areas, reinforcing its role in the field of industrial output and knowledge transfer.