



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

TRIESTE, 4 OCTOBER, 2004

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DR. SALAM**

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# Third World: Second to None

**O**ne of ICTP's most important tasks is scientific cooperation between North and South. What are the priorities of such cooperation?

The priority is to advance the level and role of science in developing countries by overcoming the debilitating isolation of scientists who work there. We seek out the best scientists from all needy countries, and constantly invent new ways for doing it. For instance, we involve roughly equal mix of scientists from both the North and the South. Our roughly 100,000 visitors to-date are split more or less 50-50 between the North and the South. This helps connect the best and the brightest from the South to the appropriate peers or groups from the North so the scientific contacts develop in mutually beneficial ways (without pulling the scientists of the



South from their countries permanently).

**What's the contribution of so-called Third World countries to the world's scientific wealth?**

If we think about the history of humanity as a whole, the answer is "a lot", and the

space here is not enough for that discourse. If we think of modern day science, it is clearly a lot less. However, many countries in the Third World have made tangible progress in science, and there are world-class institutions in

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Minister Franco Frattini and sheik Bin Zayed Al-Nahyan.

**I** am particularly delighted to accept Terra Viva's invitation to use its pages to extend a very warm welcome to all those attending the 40th anniversary celebrations of the Abdus Salam International Centre for Theoretical Physics in Trieste.

## FRANCO FRATTINI\*

\* Italy's Foreign Minister

This Centre is a source of great pride to Trieste, and of great satisfaction to the Italian government which, in conjunction with the United Nations agencies, is consistently pursuing a cooperation and solidarity policy with a large number of countries in Asia, Africa, America, Europe and

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## Third World: Second to None

countries such as China, Brazil, India, Mexico, South Korea and others. They do competitive research and contribute reasonable amounts to the scientific knowledge. Countries like Iran are growing rapidly. But the progress made by them is often spotty; therein lies the true problem.

**How can poor, poverty and disease-stricken countries have their own science and technology policies? Where should their priorities be?**

Every country should invest some time and money on science if only because, quite often, economic well-being is linked to the clever and effective use of natural resources. This requires scientific training. To take another point of view, consider Japan: it has far fewer natural resources than some African countries yet is an economic power because of science and technology.

The priority of each country need not be the same, and science does not always have to be "big" science that is expensive and out of reach. For doing such science, getting into collaborations with others from the North is often the only way.

The real problem is: suppose there is a commitment to invest in science, but where will the scientists start acquiring their basic infrastructure? ICTP can help. We do not presume that we can offer everything to all the people all the time, but we can surely offer some things to some people some of the time.

**What's the scientific and financial impact of brain drainage for Third-World countries?**

Science can flourish mostly when there is a proper environment, a certain set of standards driven by comparison with peers, a proper reward system, encouragement, and a sense of relevance—roughly said, where a scientific culture prevails. When the best people leave their country, it becomes harder to establish this scientific culture. I have already said why scientific culture is often essential for economic progress.

**Knowledge centres like Trieste bring about important synergies. What kind of synergy exists between ICTP and other institutions and the private sector's research?**

There are numerous links between ICTP and other educational institutions, all the world over: at individual levels and also at institutional levels. This happens mostly through common research and training programs. ICTP has been instrumental in setting up a number of affiliate centers all over the world. It has created networks of groups of scientists in various regions who now cooperate together in areas of common interest. ICTP has had beneficial synergies between neighboring institutions in Trieste.

However, not a lot of synergy exists between ICTP and private industries. I have tried in a few different ways but it is hard. It is so partly because that culture is not as strong in Italy as, say, in the US.

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## FRANCO FRATTINI

Oceania. The Pakistani professor and Nobel Laureate, Abdus Salam, wanted this Centre which he wisely governed for so many years, offering scientists and researchers from every part of the world a benchmark to which to look for guidance. Today, we intend to take up the legacy bequeathed to us by Abdus Salam: the Italian government is continuing, with the same commitment today as then, to support not only the ICTP, but all the international institutions based in Trieste.

I am intending to put a plan of action to the European Union for the networking of the member countries' scientific and technology centres, to be able to offer the developing world a system that will give them wider access to the most useful innovations they need to drive their development. This is also the reason for our very determined commitment to support Trieste's candidature and to fund the vast programme of work for the staging of the 2008 Exhibition. For Trieste is currently implementing the project entitled "Mobility of Knowledge"; in reality it has been in progress for a long time, thanks to such institutions as the one celebrating its anniversary today. If this candidature is successful, the fallout will bring huge benefits to the institutions forming part of the Trieste System, thereby fostering even closer scientific and technological exchanges, which constitute precisely the "mobility of knowledge" that we consider to be a fundamental condition for more harmonious relations between nations.



ICTP Photo Archives, Massimo Sironi

Abdus Salam

### Pakistan:

# No One Like Dr. Salam

KARACHI, Pakistan - His friends recall him variously as "charming" "indefatigably romantic" "poetic", "witty with a lovely sense of humour". He "was most at home in his native language Punjabi," say others. The science fraternity in Pakistan would give anything to go back in history, make a few changes and have him back "for he earnestly wanted to do something for the country. All his life he pleaded with the Islamic world to give priority to education."

And so when Pakistanis talk of Dr Abdus Salam, the founder and former director of the International Centre for Theoretical Physics (ICTP, established in 1964), some rub their hands in disillusionment and say he even had the right scientific formula to alleviate poverty. And there are others who still shout out that he "was a Qadiani laureate" (considered a heretical sect by most Muslims) and reproach him and his award.

And there are people like Dr Pervez Hoodbhoy, the eloquent professor of nuclear physics at Quaid-i-Azam University, who was quite unnerved during his first meeting with Salam in 1972 at the Massachusetts Institute of Technology and found him rather "intimidating".

But if there is consensus about one thing, it is that there is no one compared to him in Pakistan. "We don't have any such example," everyone agrees.

Try as we did to obliterate Dr Salam's memory off our nation's mind, like a stubborn stain his lifelike presence from even as far as Oxford and Trieste refused to diffuse. He not only made Pakistanis notice him, but finally to recognise that Pakistanis are proud of him.

Yet, till today the nation has not paid "its debt of gratitude" due to him, says Professor Atta ur Rehman, the chair of the Higher Education Commission who is internationally known in the field of natural products. This fellow of all the three international science academies – the Third World Academy of TWAS founded under the leadership of Dr Salam being one of them – reminisced about his "close friendship and deep admiration" for the Nobel laureate that began in cold and wet Cambridge, and strengthened till he died in November 1996. "The last time I met him was a year before his death when he was frail and confined to a wheelchair, though one could still spot the sparkle in his eye."

"He did more for science than any other laureate in the Third World and it is due to TWAS that he established in 1983, that so many of the scientists in the developing world benefit. The least we can do is name a centre after him," says Professor Atta.

While many in the generation may have forgotten that this Nobel Laureate belonged to Pakistan, Dr Salam not for once forgot his roots.

Zofeen Ebrahim

**T**he 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.



## NO DEVELOPMENT WITHOUT SCIENCE AND TECHNOLOGY

“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 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.

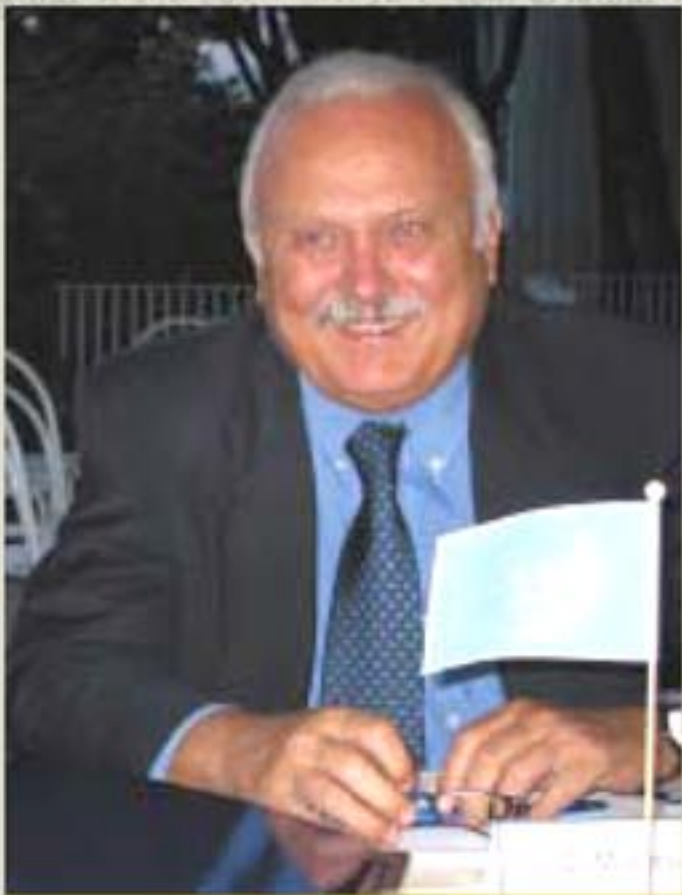
“We cannot afford to lose our scientists and physicists to the developed world. We have to provide them with the right environment to conduct their research,” he said.

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

by Thalif Deen

# The value of Trieste

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Although it cannot solve the problem of poverty and under-development, the Trieste System can facilitate the sharing of knowledge between those who have it, and those who don't, says Ambassador Claudio Moreno, of the Italian Foreign Ministry.

**Q: What does the city of Trieste represent for international cooperation in the field of science?**

A: Ever since the creation, in 1964, of the first scientific centre - the ICTP (International Centre for Theoretical Physics) - Trieste has been true to its function as a disseminator of science and technology expertise. It has aided the personal and professional development of many young people from the developing world – in a positive way by asking these trainees to commit themselves to returning home to their countries of origin, thus reducing the 'brain drain'. In this respect, Trieste has been far-sighted in its thinking.

Over the years, the Trieste System has grown progressively to its present dimensions: 75 closely integrated and connected centres and institutions. This growth has been permanently supported by the Italian Government, which has for years been the unique source of financing and is still the major contributor to Trieste.

**Q: Do you see a relationship between science and alleviation of the poverty affecting most of the developing world?**

A: In a globalized world, the importance of science and technology has increased, and its role is more crucial. To step out of the vicious circle of poverty and underdevelopment, it is essential to apply material structures and human resources from the field of scientific research to conditions and exigencies of every country. The Declaration of the Millennium Development Goals demands that we bridge the scientific and technological gap between rich and poor countries. It is also important to consider the fundamental role played by scientific and techno-

logical research with respect to creating the small and medium enterprises which are essential to alleviating poverty and start the process of economic development.

**Q: How would Trieste '08 help in modifying the tremendous gaps between North and South in the field of knowledge?**

A: Trieste does aim to supply an overall solution to the problem of poverty and under-development. What the Trieste System offers is the conscience of a correct approach to the dissemination and sharing of knowledge with Countries which lack sufficient resources to have autonomous access to advanced science and technology. The effectiveness of this approach is shown by the sheer number of people we have trained. Trieste has hosted more than 80.000 researchers from developing Countries over the years. A worldwide network of scientists has been established to transfer knowledge and science effectively, in cities and communities across the globe. Since its establishment, Trieste has opened its arms without any condition

**5** and reserve to the developing world. We think its example should be followed by others. That is why we want to launch, from Trieste, an appeal to all developed Countries to unite all the scientific poles in a common plan of action in favour of the developing world. This initiative has raised the importance of the Trieste System's proposal to host a Permanent Exposition and South-South Forum on Science and Technology for Development in this city. The purpose of this would be to examine and compare the different solutions offered by contemporary technology to cope with the major problems affecting developing Countries and focus on best practices.

**Q: What specific areas of partnership are envisioned to encourage developing-country participation in Trieste 2008?**

A: Wherever possible, the Trieste System creates affiliated centres in developing countries, giving them the possibility of utilizing the same technologies and sharing the same scientific patrimony. This model has been used particularly by the ICTP (International Centre for Theoretical Physics), the ICGEB (International Centre for Genetic Engineering and Biotechnology), the ICS (International Centre for Science and High Technology) and others. Nevertheless, all sectors of

research may be highly beneficial for the needs of developing Countries. Almost all of them may be conducive to schemes of new development, to gain new market niches, create employment and eradicate extreme poverty. The International Exposition of 2008 has as its theme 'The mobility of knowledge'. It will offer a great opportunity for all developing countries to expose their problems in Trieste and seek the most appropriate solutions. All countries - even the least developed - will be put in a position to actively participate and present potential sectors of scientific and technological progress which represent their cultural heritage and tradition. The Italian Government

has made a special effort to facilitate this wide participation by allocating a 45 million Euro aid package. This will be a unique opportunity to start an innovative pattern of cooperation and open an extraordinary window to the needs of the South - and the best ways and means of satisfying them. We pay a warm tribute to all the scientists and researchers who have served Trieste over these decades and followed the noble design of sharing their knowledge with all developing Countries. In so doing, they have realized the vision of late Professor Abdu Salam, Nobel laureate and founder of the ICTP that celebrates today its 40<sup>th</sup> Anniversary.



The Expo 2008 project at Trieste's old port.



A generation ago, the Green Revolution helped avoid a feared famine in South Asia. Now, the Gene Revolution may be an answer to shortages in the very areas where food is most needed, particularly Africa.

All three revolutions were the fruits of laborious research, science and technology –and sharing them.

Assessment by scientists is that in a world that landed man on the moon 35 year ago and now boasts to sprouting Internet cafés, powerful dish antennas and tiny cellular telephones in remote villages, science and technology also possess the potential to solve critical food issues: reducing the number of the hungry from its current 800 million and help double current food supplies for a world population expected to soar from 6 billion now to 9 billion in 2050.

“Technically, hunger can be defeated. What has been lacking is the political will to do so,” Nobel laureate Norman E. Borlaug declared on 23 September at a special lecture series of the UN Food and Agriculture Organization (FAO). “We have the technology to double world food production and to do it in environmentally sustainable ways.”

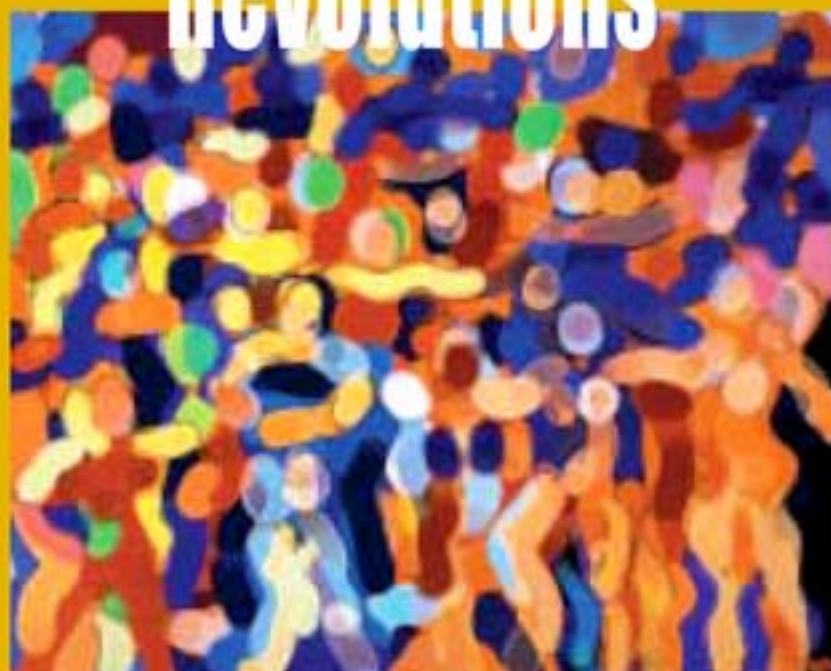
Sharing the fruits of research, science and technology is considered all the more vital since, as Borlaug points out, 80 percent of the required increase in supplies will need to come through further intensification of agriculture from the current arable land where an estimated 30 percent of irrigated area is already degraded

He called the Green Revolution of the 1960s and 70s the beginning of “an unfinished agenda” after applying agricultural science to develop modern techniques for Third World food production conditions and ushering in a new era of plant breeding with new high-yielding, semi dwarf wheat and rice varieties.

Borlaug foresees technology coming through with new high-yielding, early-maturity, disease- and insect-resistant varieties and hybrids, especially for rice, maize, wheat, cassava, and several grain legumes.

The anticipated Blue Revolution is laden with technologies to improve efficiency in water use, including through treating wastewater for irrigation, drip irrigation systems and improved water-harvesting techniques. FAO says 80% of food crises are related in some way to water, especially to drought, amid reports that future wars may over water rather than energy.

## Food vs Hunger The Three Revolutions



But now the biggest potential –and problem- in scientific breakthroughs arises from the Gene Revolution’s biotechnology in general and genetically modified organisms (GMOs) in particular.

Borlaug lauds biotechnology as offering “many new exciting opportunities to improve the yield,” sees no scientific evidence to indicate hazards from transgenic crops and adds: “Genetically modified plants will play an increasingly important role in enhancing dependability of yields... We predict that in the not too distant future when science gains the upper hand over emotions and ideology many environmentalists will embrace GMOs as a powerful ‘natural’ tool to achieve greater environmental protection.”

Biotechnology also gets a cautious nod from the UN Food and Agriculture Organization, seeing it as a useful tool in the fight against hunger, but saying that its long term impact on the environment is yet to be determined.

In sharp contrast to the Green Revolution, biotechnology is not noted for any significant international cooperation. While the Green Revolution was generated by international public research and provided national research systems with improved genetic material at no expense, biotechnology research is essentially driven by the world’s top ten transnational corporations, which are spending annually \$3 billion.

“The private sector protects its results with patents in order to earn from its investment and it concen-

trates on products that have no relevance to food in developing countries,” says FAO Director-General Jacques Diouf, adding:

“Neither the private nor the public sector has invested significantly in new genetic technologies for the so-called ‘orphan crops’ such as cowpea, millet, sorghum and teff that are critical for the food supply and livelihoods of the world’s poorest people.

Even the major food crops of the poor — wheat, rice, white maize, potato and cassava — are also being neglected, according to FAO, while biotech plants with traits of interest to the poor — drought and salinity tolerance, disease resistance, or enhanced nutrition — are receiving little attention. Six countries (Argentina, Brazil, Canada.

But, overall, North-South, West-East cooperation in science and technology for agricultural development is in constant growth.

From its modest beginnings 35 years ago, the principal forum for international scientific cooperation, the Consultative Group on International Agricultural Research (CGIAR), has 7,500 scientists in its strategic alliance with 15 research centres and a membership that includes 63 national groups, other organization and civil society units with research programs in over 100 countries.

Some 75,000 researchers in developing countries have been trained through CGIAR-supported programs. CGIAR also has one of the world’s largest seed collections, held in public trust and available to

by Hilmi Toros

all. Eleven Centres together maintain over 600,000 samples of crop, forage and agro forestry genetic resources in the public domain.

Recently, CGIAR spearheaded an innovative program to offer a high quality education to students in developing countries at the “Global Open Agriculture and Food University,” with internet communications and other technologies providing access to long distance learning to developing nations. The university will make available the knowledge developed from science research and from the work of its partners and collaborators across the globe.

CGIAR is now stressing technologies that favour poor small farmers and the need for more private-public partnership.

FAO is also citing the need to reinforce Information and Communication Technology in collection, sharing and use of information and technology, saying it should be a priority in Africa. The UN body recently signed an agreement with the NGO International Foundation for Science to develop agricultural research in developing countries and stem the brain drain from the south to the north.

“International cooperation is vital, but enhancing national capacity is indispensable,” FAO’s head of research unit Isabel Alvarez told TerraViva. She cites strong national research units in Brazil, India and China.

In fact, FAO attributes threats of mass hunger in parts of the developing world to the gap in science-based agriculture between North and South, since the pioneers of science and technology acted on the assumption that food needs of then much smaller populations in South could be met from traditionally-evolved agriculture. Local staple foods such as sorghum, millet, cassava and plantains were neglected and preference went to crops demanded by agro-industries in colonizing nations –cotton, rubber, tobacco and tea.

Even if modern technology from the North is indispensable, don’t count out time-honoured local traditions of the South: The World Bank has an Indigenous Knowledge for Development Program (treating AIDS with herbs prescribed by traditional healers or improving medicinal and food plants).

And that, too, involves building partnership, as counterparts in the north are discussing ways to build partnerships between traditional practitioners and the scientific community

# 7 Out of Africa, Always More Need for Physics

By Christina Scott

Some may see Italy as the rump of Europe. Others see a gateway to another continent. Since the days of the Greeks, Italy's various rulers have looked south.

So in a way the close relationship for four decades between Trieste's International Centre for Theoretical Physics and scientists in Africa is carrying on a long tradition.

For many African lecturers and researchers, trapped by stunted budgets and isolated by vast distances (the Democratic Republic of Congo is the size of all of western Europe) one of the wonderful opportunities offered in Trieste was – and remains – human: the rare chance to share ideas with people who understand the language of physics.

Ahmed Bawa recently became professor and distinguished lecturer in the department of physics and astronomy at Hunter College, part of the City University of New York in the USA. When based in South Africa, he made the long trek to Trieste three times – “two of them while Abdus Salam was still alive and director and the other one when Virasoro had taken over.”

“They were short stints but they were quite important,” recalls Bawa, former deputy vice chancellor of what is now known as the University of kwaZulu-Natal in the Indian Ocean port city of Durban. “Perhaps the most important outcome was the fact that it provided the opportunity for some longstanding friendships and research collaborations. “One of the world's leading relativistic cosmologists, George Ellis, a professor of applied mathematics at the University of Cape Town over on the Atlantic coastline of South Africa, notes that physicists in Africa “are still quite isolated.”

Now looking at debates as to whether there is one universe or many, and if there was ever a start to the universe, Ellis taught in Trieste for some four years in the diploma programme and in summer school as well as having a general connection to it while at SISSA from 1987 to 1994.

“The internet has made a huge difference so one can

“My calculations have to be done at the centre due to a lack of computer facilities and library at home,” says Professor Bernard M'passi-Mabiala, who works on condensed matter at the 21-year-old Marien Ngouabi University in Brazzaville, in the Congo. He first visited Trieste for three months in 2001 and was there last year for another three months.

programme for physics students in M'passi-Mabiala's tiny west African nation. The 48-year-old nonetheless has one Masters student and two Ph.D students by collaborating with the Universities of Douala in Cameroon and Strasbourg in France and ICTP's STEP programme. ICTP's influence spreads in other ways as well: another colleague at the same department in the same university, climatologist Clobite Bouka Biona can better further his research on the exchange of particles and gases between the atmosphere and tropical forest now that he is a senior associate.

George Ellis also praised the Centre's “incredible library with good photo-copying facilities” but said its greatest achievement may lie in creating some very central to physics: critical mass. Only this time, the critical mass lies not in atoms but in DNA. Our DNA. Our intellectual capital.

Ellis listed the ICTP's “support of many projects in Africa through their external office – meetings, exchanges of scholars, et cetera. You need some viable scientific system for people to join once they have passed through those earlier stages. They need some scientific prospects to aspire to locally – an ethos and colleagues that will support them. You need a critical mass of people to make science happen. Places like Trieste can give such local groups encouragement and support.”

But if you're still not convinced about the importance of the Trieste centre on African physics, go to the source! Moroccan-born Jamila Douari now researches high energy at the Institute for Advanced Study at the University of Stellenbosch in South Africa, while bioengineer Tania Douglas is not far away at the University of Cape Town. Both are currently at the ICTP – so ask, and you may receive an answer!



now keep pretty much up to date even from remote places,” he notes. “But it is still important from time to time to physically get together with colleagues and informally discuss with them – to hear what is brewing before it is finalised.”

But people don't even have to leave Africa to benefit from the Centre. Ernesta Meintjies, who works with the medical imaging unit run jointly by South Africa's Medical Research Council and the University of Cape Town, benefits as a junior associate even though she has never made the overnight flight north to Trieste – yet. She can now buy books that were once beyond her budget, for example.

Many scientists from Africa singled out the infrastructure at the Centre as invaluable.

M'passi-Mabiala is head of a department with more than 300 undergraduate students and says he would not have got his professorship without the help of the Centre. In fact, he doubts if he would have had the courage to submit papers to well-known journals without ICTP assistance in the earlier stages of writing.

He said the Centre gives scientists from Francophone Africa the ability to compete on an equal footing with colleagues from richer countries: “The ICTP is very stimulating for me because I do my best to produce good results – as good as those people who work in developed countries!”

And the good work is carrying on with the next generation of physics in the Congo, even though there is no post-doctoral



## SCIENCE MUST BE LINKED TO INDUSTRY

In industrialised and developing countries alike, science must be put to work for industry, in order to secure development and well-being, says the mayor of Trieste, Roberto Dipiazza. The very nature of Trieste, whose history destined it to be an eternal "international city", makes it the ideal place to bridge the scientific communities of North, West and East.

### What does ICTP represent for Trieste?

The passage through ICTP and the other scientific institutions, and therefore through Trieste, of dozens of thousands of foreign students from all over the world, among them over 60 Nobel Prize winners, has given Trieste world recognition as a 'city of science'. In places like Pakistan or India, Trieste is probably better known for ICTP than for any other of its characteristics. The presence of these qualified minds, the scientists, is also a cultural gain for the city, which has one of the highest rates of scientists per capita in the world.

### What is the city doing to develop this identity further?

Unlike other areas of this region, Trieste does not have an industrial vocation, but one of culture and trade. The theme 'Mobility of Knowledge', with which Trieste is advancing its candidacy to host the Expo 2008, says a lot about it. Now that Europe's inner barriers are falling, Trieste, which was placed on the border of western Europe, is now located in the middle of the enlarged Europe.

Our plans to revitalise the now-empty spaces in the 70

hectares of the city's Old Port to host Expo 2008, placed in a prime location downtown, aim at the creation a sort of Trieste II, another pole of science, technology and services, including housing and services. We envision a big second science campus, like the existing Science Park, not just a site for the 90 days of the exhibition.

There is an investment plan, to be carried out by the Italian state, the private sector and others, in order to make this possible, should Trieste win the bid for Expo. This plan is not limited to the Old Port, but also to the other scientific areas, namely Basovizza, where the cyclotron sits.

### What's the significance of rehabilitating the Old Port?

We have 70 hectares of huge warehouses with significant architectural value that are empty, virtually abandoned. That is right here in the city. Like many other port cities, we intend to give a new meaning to such areas. Its location in a privileged area will undoubtedly facilitate the provision of services that are less accessible in the suburbs, where many of the current institutions are based.

### What's the link between Trieste, the Expo 2008

### motto 'Mobility of Knowledge' and the developing world?

Mobility of Knowledge is a theme that only a city like Trieste can afford to promote. It means that humankind's wealth of knowledge is built with the influence of many and it has now the particular meaning that the transfer of knowledge is about the only way to help those developing countries which cannot even afford to produce their own food stuff.

In the coming years, together with the Group of 77 (developing countries), we should focus on developing science that is linked to industry and labour, not just academic institutions. Science must be put at the service of industry, to promote development.

### Is it not the case in this region?

Unfortunately, no. There is no link between scientific work and industry in this part of Italy and we must start taking the first steps toward it. And not just in this region, but also in neighbouring countries. Like I just said, Trieste can be very attractive as a pole of excellence for eastern European countries. Just now I had a meeting with a delegation from Belarus who expressed great interest in our plans.

## ICTP "Amazingly Stimulating"

NEW DELHI. Prof. Deepak Kumar, who specializes in Condensed Matter Physics and Statistical Mechanics is certain that the ICTP is one of the finest centers of its kind anywhere in the world. Kumar's first visit to ICTP was in 1976 when he attended an especially stimulating ten-week long winter college on Interaction Radiation with Matter.

"The physics activity was amazingly stimulating and balanced. On the one hand we learnt very high class physics through the lectures and seminars and on the other we had the time, the atmosphere and excellent facilities to pursue our own research," said Kumar who obtained his doctorate from the University of Pennsylvania and now teaches at the School of Physical Sciences (SPS), Jawaharlal Nehru University.

Since 1976 Kumar has returned to the ICTP on six different occasions and has always found the Centre supportive including prompting physics among scientists in the third world.

"In 2000, for example, when the School of Physical Sciences (SPS) organized a three-day conference on 'Quantum Many-Body Physics,' a generous grant from the ICTP helped ensure the participation of many scientists from other developing countries in the region."

That seminar was important because it reviewed common themes in fields ranging from elementary particle physics and cosmology to superconductivity and quantum Hall effect and that common perspective continues to inspire and motivate physicists from different backgrounds.

Asked what impressed him most about the ICTP, Kumar unhesitatingly indicated the library which according to him is its single most important resource. "The collections is truly amazing."

But even more than that, Kumar believes that the ICTP has just the right ambience to promote research activity. "It is always such a pleasure to be in the ICTP because of its beautiful locale, idyllic surroundings, genial and helpful staff and even the café and dining hall."

"A visit truly rejuvenates you professionally as well as spiritually," is how Kumar sums up his personal experiences at the ICTP.