Honoured Guests:

Ambassador Caruso asked me to speak briefly to you, and I am thankful to him for this opportunity. He suggested that I speak about the work that the city of Trieste---in particular my own institution---has been doing for science in developing countries, and why this work is even more important today than it was some forty years ago. I am happy to do so.

As you all know, for several hundred years, Trieste was an international city in which cultural diversity thrived. For instance, it was in Trieste that a young Irishman, James Joyce, took inspiration, almost exactly 100 years ago, to become one of the world's best-known English poets. However, when the city of Trieste returned to Italy fifty years ago, it found itself in different set of circumstances, but its international history had not been forgotten. I will return to this point in a moment by connecting it with another point I will now make.

Forty years ago, a young Pakistani physicist made a case for the formation of an International Centre for Physics, with the goal of raising the level of science in developing countries. The plan was to accomplish this goal by reducing scientific isolation through any means possible. He felt, by his own experience, that

many good scientists in the poor parts of the world had no means for sustaining their creativity, and so would either just stop doing science or migrate to the West. He thought that, if they could be connected to centres of higher learning and serious research---either through periodic visits, or training activities such as schools, conferences and workshops---the scientists would be far more likely to stay in their own countries and do their work there---eventually adding to the scientific capacity of their countries, and the building of their national wealth. This physicist was Abdus Salam.

Salam's idea of an international centre, with the goals I have just mentioned, had a natural appeal for scientists in Trieste because, as I already stated, Trieste had not forgotten its international past. Through the collaborative efforts of Salam and the local physicists, the International Centre for Theoretical Physics was created in Trieste in 1964. For brevity, I shall henceforth call the Centre by its initials, ICTP.

Since ICTP was created, Trieste has emerged as a city of international science. This has happened partly through ICTP's leadership and partly through the efforts of other distinguished scientists in Trieste.

You may have seen the recent article in the Time Magazine of August 30, 2004.

The cover page of that particular issue, talks about Europe's secrete capitals, each with a "specialty worth boasting about"…

Inside it are listed 14 "secret capitals", which, the article says are "…not big, but clever". You see Trieste there in the map, to the left.

On the page dealing with Trieste (which you cannot read easily because of the small print), the article says "Trieste, gateway to the new Europe, Eastward Bound and Trading Up". The page also says towards the end, "…Trieste has also become a capital of scientific research, with the growing stature of the International Centre for Theoretical Physics and the International Centre for Genetic Engineering and Biotechnology… Roberto Drozina, a top manager of Trieste's industrial consortium, says…"If Trieste were a stock, I'd buy some shares…I think in four or five years, you'll start to see a real return."

So what exactly is Trieste doing right? I cannot presume to speak on behalf of everything that happens in the city (and others will say more later), but allow me to remark on International Scientific

Institutions, particularly about past accomplishments and future plans of my Centre.

First, what international centres are there in Trieste?

Let me now say a few words about ICTP, what is about and what it has done in the last forty years.

Let me now summarize: A brief list of ICTP's accomplishments includes

About 2000 scientific activities---from introductory schools to advanced workshops---that were organized on ICTP's premises

About 100,000 scientific visitors---about half of whom work in developing countries and many of whom regard ICTP as a scientific home away from home

Thousands of research papers that have been published by the ICTP community in international journals, and so forth.

Some of ICTP's scientific staff and many of its visitors are among the best in the world---even if we set aside for a moment the outstanding work of our

founding director that earned him the 1979 Nobel Prize in Physics.

During Cold War years, ICTP was where the best scientists from both sides of the iron curtain met.

ICTP has spun off intellectual centers elsewhere in the world where they were needed most, and nurtured bright young scientists when their careers needed a bit of boost.

Locally, in Trieste, it has helped create new scientific institutions in Trieste, adding substance to the city's claims of caring for international science.

We are indeed proud of our accomplishments.

But the magnitude of what remains to be done is immense, and I want to spend a few minutes on it. If we assume that a viable ratio of scientists to the general population is a modest 1 in 1000, and that a third of these scientists properly belong to physical sciences---this being ICTP's domain---we ought to be connected to about 2 million scientists; by this measure, we fall short by a factor of 20.

There are other new hurdles that we face in the modern world. Let me give you one example. These

days, it is impossible to do any competitive science without being connected to electronic information through reasonably fast internet. Most of the new journals are electronic and most of the paper information in scientific literature is being converted to electronic format. Those that have effective access to electronic information have an obvious advantage.

What is the nature of this internet connectivity in the world today? The following two figures illustrate the problem.

The fact is that there is not only a huge gap but the gap is increasing in some cases.

I therefore ask: How do we motivate well-meaning scientists to be engaged in their work if they has no internet access? If the scientists in a country are not up to speed, who shall advise its government about the opportunities and responsibilities in shaping its economy and the health and well-being of its population?

All of us have to be engaged in these issues. We have to be engaged not merely because it is a moral imperative but because no part of the world today can prosper in exclusion. If we leave some parts too far behind, the consequences can be quite adverse for us

all. This is the lesson forcefully inflicted upon us in the twenty-first century.

As ICTP turns 40 this year, these issues weigh on our minds. While we shall continue to support first-rate scientists individually, we have to develop several new avenues. Since the developing world is no longer homogeneous (if it ever was), we have to develop regional strategies.

Despite the continuing and generous support of the Italian Government, we have neither the physical facilities nor the financial resources to arrange for every needy scientist to visit ICTP, or support him or her in the home country; so we have to work with the few outstanding and likeminded institutions to raise regional levels of science, in part through South-South cooperation.

Where scientific traditions are great but resources scant (such as in Central Asia or Eastern Europe), new Centres must be created.

We have to go beyond our support of individuals to groups of scientists who can be mutually supportive and multiply ICTP's effect.

Taking advantage of our sponsoring international institutions, namely UNESCO and IAEA, and others such as ITU, we should strive to provide fast access at least to major research institutions throughout the world; at the same time, work with scientific publishers to provide access to electronic publications and encourage distance learning.

I focused so far on a few details. The spirit of what we do t ICTP is to spread the notion of scientific excellence. To support diversity without losing sight of quality is not easy: while we cannot demand the same accomplishments from all those we support and nurture, there can be no compromise on personal excellence and commitment to learning. In the end, this is what matters most and will be most telling of our Centre's effectiveness.

Ladies and gentlemen, these are some of the issues that our Centre cares about. In a nutshell, this is what we do in Trieste. You are all important people, and can make a difference to the world in many ways. I therefore urge some of you to rise to the occasion and become partners in our work better: in this way, we can increase the stock of Trieste, of Italy and our own faith in humanity.

Thank you very much.