

## The State of Play Across Central and Eastern Europe

Earlier this month the American Physical Society organised a meeting in Washington to discuss international collaboration, and possibly the formation of a world-wide physics council. Before the meeting Dénes Nagy, Secretary General of the Hungarian Physical Society, requested a statement of present concerns from Central and Eastern European (CEE) countries, by writing to CEE Physical Societies. The replies formed the basis of a presentation at the meeting in Washington given by Denis Weaire, the President of EPS. Here, *Europhysics News* publishes the most interesting replies.

### Romania

#### *Science priorities in Romania*

As the entire economy is in a process of profound transformation, science is hardly accepted as a valuable partner in the modernisation and re-structuring effort. The old technology transfer links have disappeared and new mechanisms designed in the offices of the Ministry of Research and Technology remain purely bureaucratic actions. It is a real danger that in the view of a large segment of the new political elite science appears mostly like a spiritual endeavour rather than a practical and lucrative activity. The R&D expenditure in Romania is one of the smallest in Europe (less than 0.5 per cent of the GDP) though through the inherited infrastructure, potential, past and recent results are comparable even with those from many developed countries. As a result, scientists experience a drastic reduction of expenditure on equipment, materials, books and journals, communications and travel – most of the funds being directed towards dwindling salaries. In fact, a stable and sustainable science policy, politically invariant, is missing; long term strategic projects have a formal character, aborted as soon as they have been elaborated. This situation favours confusion and arbitrariness of central administrative bodies with a prevalence and even exclusivity of the thesis of bureaucracy and other non-scientific bodies (*ie* pseudo-scientific trade unions) over scientific bodies' (scientific councils, professional organisations) recommendations.

In a period of crisis the scientific community finds itself divided between two extreme, exclusive positions. One regards science as a purely curiosity driven activi-

ty, thus accepting global restrictions, but rewarded copiously with funds directed to the few, mostly theoretical researchers – a process by which much of the existing, potentially profitable research infrastructure would disappear forever as would disappear any hope for oriented, economically ordered research. A second view attempts to preserve in the area of research and government the financing of some activities outside the area of science. This is still a remnant of another era when science was regarded as a 'production means'. This is, in fact, a very serious problem and it can only be solved once the government has created the framework and mechanism for a 'scientific' approach to a science policy integrated into European and developed-world scientific policy. An informed counselling and honest peer review, un-biased by 'pro-domo' interests, appear absolutely necessary in the near future. Physics, chemistry and mathematics are probably the most open areas and ready for serious scrutiny. However, if not the entire science sector and the entire R&D funding policy are to be reviewed a punctual approach would be suicidal.

So, to conclude these remarks, a new science policy of the government is wanted, based, first, on the recognition of the role of science in society and in the present era of general re-structuring by allocating a decent share of the budget; and second, on clearly stated long and medium-term priorities and demands followed by a restructuring and re-orientation of research institutions – either professional institutes, university research, or academia. Similar help can be offered within international scientific projects meant to rise and solve real needs of research establishments and individuals.

*A. Calboreanu*

*General Secretary, Romanian Physical Society*

### Bulgaria

We are especially interested in supporting the re-establishing of pre-existing intra-CEE relations. Our Union used to have agreements for exchange of physicists for short-term visits with all Eastern-European countries, and we are struggling to revitalise these agreements.

Additionally, we are in big need of support for subscriptions for leading journals in physics. There are rumours that the World Bank could provide such support, but we do not know the details.



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*e-mail* eneditor@univ-mulhouse.fr

34 rue Marc Seguin, F-68060 Mulhouse, France

*tel* +33 3 89 32 94 44; *fax* +33 3 89 32 94 49

Finally, the possibilities of marketing the applied aspects of the scientific products of our members are of interest to us.

*Alexander Petrov*

*Vice-President, Union of Bulgarian Physicists*

### Poland

#### *Concerning all countries*

Establishing a World-Wide Information and Advisory Centre for Physicists.

There are many initiatives which are aimed at helping Third World, CEE and Former Soviet Union Countries.

Unfortunately, many of them are hardly known, or if known, their regulations are frequently not understandable for people from these countries.

Such a centre would make it possible to reach the information about aid pro-

There will soon be a lawyer among us. Find out why, turn to last page of News from EPS...



grammes, and not only by accidental or friendship contacts with others. Moreover, it would also teach how to join the programs. It means that many programs, which seem to exist more for bureaucracy satisfaction, would become more effective.

#### CEE countries

It seems that many problems of physics and physicists in CEE countries and in the USA, Japan and Western European countries are similar or identical, except for the scale of economic difficulties.

Major problems are the disappointment and anxiety of societies concerning science, and physics especially, and the lack of long term science policy of governments.

The current exchange of information and experiences concerning the situation and undertaken initiatives between all organisations is essential for solving the problems which are common to all physicists around the world.

On the other hand, the physicists in the less economically developed countries, as the CEE countries are, meet limitations which are unknown to physicists in rich countries. The result of these limitations is that the majority of physicists of CEE countries have no possibility of doing research according to their capacities. The idea that reduction of these inequalities is necessary and that it can be done only owing to international help is generally accepted. The question is how to do it effectively.

In our opinion the following activities are the most important ones for physicists and physics in CEE countries:

- Supporting the joining of CEE countries to world-wide and European large scale facilities (special membership fees and mobility funds, etc)
- Considering the possibilities of setting

- up large scale facilities in CEE countries
- Supporting the re-establishing of pre-existing intra-CEE relations
- Supporting the creation of centres of excellence in CEE countries (a centre of excellence is an extremely well equipped laboratory in which physicists from all over the world will have possibilities to do highly specific measurements, as well as a theoretical centre with excellent staff accepting young physicists for training programs and advanced scientists to do some research)
- The restructuring of the EU grants to allow spending more money on basic research
- Support establishing of the electronic versions of the most important physics journals published in CEE countries
- Support the introduction of new electronic technologies to libraries
- Support programs for school teachers (international exchange, English courses, etc)
- Continuing the sponsorship of participation of individual physicists in international conferences as well as organising such conferences in CEE countries.

#### Physics education and public education

Topics: Physics Education at all levels (general, basic public education, university level, continuing, lifelong learning) in the modern, knowledge-based, information societies and, for the next generation, the new challenges for the physics education system in a rapidly changing world; and special needs for education reform in CEE countries in accordance to their political and economic transformation.

We are currently facing a fast dropping of prestige for physics in all countries. Young people treat physics as a boring and not understandable subject. Generally they do not want to learn physics. The number of physics students is systematically decreasing. The most talented young people prefer business, management and administration instead of studying physics. Governments and public authorities are also not convinced about the fundamental and unique role of physics in creating human culture, standard of living and in solving global problems such as energy, environment, population, unemployment, etc.

Therefore, physical societies have to pay more attention to the quality of physical education of the generation. This includes the stimulation of the development of

suitable educational programs (curricula), modern teaching technologies (multimedia, computer aided teaching, using the Internet), education and self-improvement of teachers. It requires strong collaboration in the integration of studies between physical societies and related international organisations as well as universities and industries all over the world. International exchanges of teachers and students is a key-point of cooperation in this field. All above mentioned activities should be carried out and/or coordinated by physical societies or their special world-wide representative body.

The enterprises which have been already undertaken, mainly under EPS auspices are the following:

- Interdivisional Group on physics education activities (Forum on Education, University Teaching Section)
  - EMSPS creation and activity
  - EUPEN foundation and activity
  - EPS Strategy Plan elaboration
  - SEFI Working Group on physics activities
  - PAC (Physics Action Council) of UNESCO – Working Group on University Physics Education activities,
  - IUPAP Commission C14 on physics education activities,
  - European Parliament, Committee on Culture, Youth, Education and Media
- Henryk Szymczak  
President, Polish Physical Society

#### Slovenia

##### General statements

The economic and the political transition in Slovenia, the transition in Eastern Europe (the break-up of the Eastern market) and the disintegration of Yugoslavia followed by the war (and the break-up of the Yugoslavian market), has meant that one-fifth of workers have lost their jobs and that most factories have, in the privatisation procedure, closed down their research laboratories or radically reduced the number of researchers. Accordingly, less than one-sixth of researchers in industrial laboratories have kept their jobs (from 8500 before the transition to 1300 now).

Physicists are not in a better position. And the following are the consequences:

- Young physicists do not have a good chance of getting a job in an industrial laboratory. They could, by the support of the State and their University, start their own enterprises if they and the University would only know how to do

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it. (We have two universities but only the University of Ljubljana has a physics department.)

- Possibilities for young scientists to get positions at institutes are also small. There is less and less money for research from the State and accordingly fewer and fewer research positions.

#### *What can EPS and IUPAP do?*

This year we cannot gather enough money to pay the membership fee for both the EPS and the IUPAP. We have paid the membership fee for the EPS only. We have to kindly ask IUPAP to forgive us.

We also cannot pay our students to participate in the EU Mobility Scheme (to go to other European universities for a year or a half of the year). We would need help to do this.

Since basic research also has difficulties in Western countries, our government is anti-stimulated to support it. In spite of that, it could help if the IUPAP, together with the EPS, would recommend that our government not reduce the money for basic research, since new ideas come from this field to the applied-research field.

Anyhow, like in all countries, the research money is a small part of any State budget. In our country it is smaller than in Western countries (a smaller percentage, that is).

I believe that small countries, like Slovenia, have some hope to not completely disappear into the European community, if the people of Slovenia are as much educated as possible. The universities, therefore, need the basic research as well as the knowledge of how to create and transfer applied knowledge to (small boutique) industry.

#### *Suggestions*

The European (as well as World) Physical Society could help in organising special courses at universities, in which students (and teachers) would learn how a physicist could create a knowledge needed to start a new enterprise. There should exist also applied-research laboratories in physics departments.

It would help a lot if departments of physics of different countries were more connected, experiences were more shared, and teachers and students would communicate more.

*Norma Borstnik*

*President, Society of Mathematicians, Physicists and Astronomers of Slovenia*

## Hungary

From the 50s to the 80s, physics research was mainly concentrated in a few research institutes at the Hungarian Academy of Sciences, the largest being, with over 2000 members, the Central Research Institute for Physics in Budapest. Since 1990, basic research has been permanently being shifted to the universities, and the Academy of Sciences has lost already about 30 per cent of its researchers. This process is still going on: the so-called 'consolidation program' of the research network of the Academy of Sciences implies further reduction.

The fact that pre-existing expertise has probably suffered somewhat less than in some other CEE countries is due to various reasons:

- Some active research groups have moved from research institutes to universities and other research institute groups have also become part of university education and research programs.
- Already in the 70s, Hungarian physicists developed prosperous relations with their western colleagues. This still significantly increases the efficiency of basic research.
- Although many talented young physicists have left and are still leaving Hungary for Western countries, both the institutes, the universities and the physical society take care to keep in contact with them by inviting them to give lectures, and by including them in common research projects, etc.
- Hungarian physicists have over ten years of expertise with research grant systems. Therefore they are relatively successful in applying for EU grants.

In spite of this, the basic problems of physics in Hungary are not much different from those of other countries in the region. There exists no long-term science policy of the government. Consequently, the institutes are unable to develop their own long-term policies.

The R&D expenditure is about 0.5 per cent of the GDP. Within this figure the relative contribution of basic research is high (typical for countries with less-developed industry and of low GDP) but its absolute support is still a factor of 10 to 15 less than in West European countries.

The institutes are unable to cover their own running costs. Therefore, successful applicants are charged with costs that normally should be considered to be part of the overhead (local telephone, bureau

materials, liquid nitrogen, part of the salaries, etc). As a rule, it is much easier to obtain money for investments than for running costs. And some new and expensive research equipment cannot be efficiently used.

The grant system is only suitable for 'little science'. With the exception only of CERN experiments (Hungary is a full member of CERN), no funding system exists for big science or, for experiments at large scale facilities. As for mobility costs, we may expect some positive changes from the TMR program of the 5th Framework Program of the EU. Still, the question of the membership fees (ESRF, ILL, etc) has to be solved.

Pre-existing intra-CEE links have suffered a lot. Although there exist inter-governmental and inter-academy cooperations in the case of a few countries (Poland, Slovakia, Czechia, Romania, Slovenia) we may speak of existing efficient links. Also, several GDR-links (now, of course, German-Hungarian cooperation) have survived. The biggest problem in this respect is the former Soviet Union. A typical problem of Russian-Hungarian cooperation is that the Russian party gets no funds from its own governments and is, therefore, unable to fulfil its duties to the common research project. In view of the exceptional experience and knowledge of most Russian physics institutes, this is a great loss to the science of the region.  
*Dénes Nagy (replying to his own letter)*  
*Secretary General, Roland Eötvös Physical Society*

## Louis Cohen Dies

At the end of July Alun Jones, Chief Executive of the Institute of Physics (IoP) in London, wrote to the European Physical Society with the sad news that Louis Cohen had died on 28th July, 1997.

Cohen was a founder member of the EPS in 1968, and was largely responsible for the creation of its constitution. He served on the Executive Committee twice, from 1968 to 1973, and again from 1986 to 1990.

Denis Weaire, EPS President, has written to the IoP to express his regrets, 'remembering a career dedicated to the physics community at both national and international levels...Louis Cohen will be sadly missed.' (TC)



## The 11th EPS General Conference

The European Physical Society's next big physics shindig – an overview of physics developments given at a week long conference every three years – will be held in London conference facilities close to the Houses of Parliament, Westminster, in two years time.

The last party was held in Seville in 1996. And the coming party, known as EPS-11, will begin on 6th September, 1999 in the Queen Elizabeth II conference centre and will continue at Church House, which was the venue for the very first meeting of the United Nations in 1945.

The man in charge of the programme is Sir Arnold Wolfendale, who was the UK's 14th Astronomer Royal. And as with all EPS general conferences, it will aim to provide plenty for young physicists. (TC)

## Student Grants

EPS announces 10 student grants for student mobility exchange within the European Mobility Scheme for Physics Students network during 6 months in the second semester of the academic year 1997/98. The scholarships (amounting to 500 Ecus per month) can be granted to students from EMSPS institutions in Czechia, Croatia, Hungary, Latvia, Poland, Russia, Slovenia, Slovakia and Ukraine.

Applications should be sent (preferably by e-mail) before 1 December 1997 to Gero Thomas at Mulhouse (g.thomas@univ-mulhouse.fr). The applicants will be judged by the board of the Mobility Committee and will be notified of its decision before 15 December. (HF)

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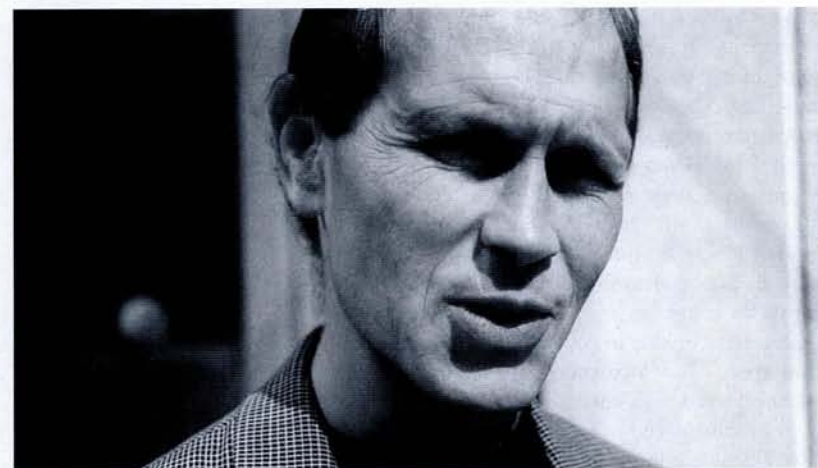
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contact: Membership Department  
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One Physics Ellipse  
College Park, MD 20740-3844

tel +1 301 209 3280; fax 301 209 0867  
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On 1st October David Lee took over the head management role at the European Physical Society, and next year will hopefully step into the shoes of the EPS's longest running employee, Gero Thomas, who has given 25 years and will finally leave his office next spring. And how does the prospect of taking Thomas's place strike Lee? "They're big shoes."

Lee is originally from Oakland, US but now lives in Strasbourg and recently took up French citizenship. He has extensive experience in management and international law, particularly in France. Lee is already familiar with the area around EPS HQ in Mulhouse – he used to coach a local rugby club.

His business background could be a key asset in his work for EPS in which, "you are trying to be fair to people who are calling on limited resources." (TC)