

IAPS: Survival Against The Odds

The International Association of Physics Students (IAPS) turned 21 last year. The odds against the survival of such an organisation – an entirely student-run body, whose leading members have no more than a year or two to spare before moving on – must have been huge, but survive it has. Here is the story of the Association, and of the remarkable people who made it happen.

On the afternoon of Saturday October 18th 1986, four physics students at Eötvös Loránd University (ELTE) sat in a room in Budapest feeling tired, but rather pleased with themselves. Their project – which many must have thought impossible – had been a success. In the room with them were 25 fellow physics students from all over Europe, including both sides of the Iron Curtain – the participants in the first ever International Conference for Students of Physics, which the four had spent the previous few months organising.

Great changes were taking place in Hungary at that time. János Kádár had ruled with an iron fist ever since the 1956 uprising, but paradoxically – or perhaps *because of* the excesses of the repression – the country had evolved its own brand of communism, sometimes described as “goulash communism”, in which private enterprise was tolerated to a degree unknown in the rest of the Eastern bloc. When, in 1985, Mikhail Gorbachev became General Secretary of the Soviet Communist Party, and ushered in the age of *perestroika* (restructuring), therefore, Hungary had a head start; it was Hungary that would precipitate the fall of the Berlin Wall, along with the rest of the Iron Curtain, by opening its border with Austria in September 1989.

Against that background, opportunities were opening up in the country for resourceful and creative people who wanted to do something for their fellow citizens; such an individual was Péter Ván.

“I wanted to do something for the sake of our small society – a kind of social work”, he says. “This is still a principle for me. I try to do things, beyond my work and my family. To do something for the other humans around”. What he and his three colleagues at ELTE – Patroklosz Budai, Ákos Horváth and Péter Lévai – decided to do was to hold an international conference.

The four made up the foreign affairs group of the youth organisation of physics students, itself a sub-group of the Kommunistá Ifjúsági Szövetség (KISZ), the Communist Youth Association, in Hungary. “It was obvious that we needed experience in English; to be a physicist is an international job”, says Ván. So they became interested in summer job-related exchange visits, and contacted IAESTE (International Association for the Exchange of Students for Technical Experience). At the same time they had the idea of organising a conference, and a meeting of all physics students at the university endorsed this plan. With help from the university (which provided lecture halls and equipment for the conference free of charge), from the Central Research Institute for Physics of the Hungarian Academy of Sciences, and from their parents, the four started planning the conference. Invitation letters were sent to physical societies and universities all over Europe (these were pre-email days), as a result of which bookings came in from eight different countries (Hungary, Poland, Yugoslavia, Czechoslovakia, East and West Germany, Italy and the Netherlands).

The first ICSP (the name was later changed to ICPS: International Conference of Physics Students) covered three full days (not counting arrival and departure days). There were student lectures, guest lectures, scientific visits (including an opportunity to observe a well-timed eclipse of the moon), and, of course, parties. At the end of the conference, everyone felt it had been a success and should be repeated, not just next year but every year; there were also suggestions for other activities such as summer and winter schools, and scholarships.

But the organisers knew that something else was needed to make it all happen – an international organisation. “We saw immediately ... that what we had done would not be enough in the future”, says Péter Ván. At the end-of-conference meeting, attended by some invited adults from the university and the government as well as the participants and organisers, he dropped a small bombshell. “We promoted the idea of an international physics organisation. They were surprised. You may imagine – you come to eat a pizza and they want you to build an oven ...”. However, the response was enthusiastic, at least among the students; and over the next year, the new organisation – as well as a follow-up conference – began to take shape.

ICSP 1987 was held in Debrecen, eastern Hungary. The catchment area had by now expanded to take in France, Romania, the UK and Sweden, and altogether eleven different countries – including all those represented in 1986 with the exception of Yugoslavia – sent delegates, the total attendance being about 40. As well as all the academic, social and cultural activities that had been included the previous year, there was a formal meeting on the last day – Saturday September 12th – at which IAPS was born. Membership was open to two classes of members: national committees and individuals. (Local committees, covering a university or group of universities, were added later). Three national committees (Hungary, Poland and the Netherlands) signed up straight away, with many more following later.

Among the participants that year was a second-year student from Budapest called Tamás Fülöp. He had been present during the first conference, but, as a very new student, he says, “my contribution to the organising work was making coffee for the participants”. Even at Debrecen he played a fairly minor rôle, but was inspired by the ideas and visions of the older organisers, and became the first secretary of IAPS, with Patroklosz Budai as president. These two set about the task of drawing up the first Charter and Regulations of the new body; these documents, says Fülöp, provided IAPS with a “permanent backbone” which would hold it together in the face of the constant changes of personnel which are inevitable in a student organisation: when members of the group moved on, they would leave something behind for others to build on.

At that time Hungary did not even have a national organisation for physics students. In the past, it had not been easy to set up such organisations under the communists, but then a new law was passed which allowed the creation of civil organisations; Ván, Horváth and colleagues took advantage of this to found MaFiHe (Magyar Fizikushallgatók Egyesülete), which was among the first 10 civil organisations set up under the new law. This provided much-needed continuity at the national level too; and MaFiHe took on the role of liaising with IAESTE, so that the original goal of promoting exchange visits for Hungarian physics students was achieved.

1988 saw ICPS moving out of Hungary for the first time; it took place in Prague, Czechoslovakia. The Hungarians gave the organisers lots of advice on how to run the conference (including a last-minute plea to schedule the IAPS Annual General Meeting before, rather than

after, a party!); in fact the archive shows Budai writing to ICPS organisers throughout his long presidency, and while the advice was no doubt timely and welcome, it also covered rather trivial or obvious points such as the need for invitation letters to be written in good English with no spelling mistakes. Clearly he was having difficulty “letting go”.

From 1988 on, the conference has been hosted by a different country every year (several countries have held it more than once, but never consecutively). In 1989 it moved into Western Europe, crossing the swiftly-disintegrating Iron Curtain. The conference opened in Freiburg, West Germany, on Monday August 28th; two weeks later, on September 11th, Hungary opened its borders and hastened the collapse of the Eastern bloc.

At its 1989 AGM, IAPS took another memorable step. A new Charter was introduced which mirrored much more closely the model constitution of a typical non-governmental organisation, the intention being to register the Association as a legal entity, open a bank account and be recognised by the international physics community. Formalisation of the status of IAPS took rather longer than anticipated, however; not until 1999 was the Executive Committee able to present to the AGM a proposal for collaboration with the European Physical Society (EPS), but at least the relationship has lasted – today, IAPS is registered with the French courts at the headquarters of EPS in Mulhouse, France, and EPS also hosts the Association’s bank account and provides useful advice.

Among the changes was a re-naming exercise: to harmonise more closely with international standards for such organisations, the ruling body of IAPS was to be known as the Central Office (CO), and would consist of a President and Secretary who must come from the same country, the maximum term of office being three years. (A Treasurer was added later). The Central Office replaced the previous governing body, which, in a self-evidently conscious bid to avoid looking too hierarchical, was known simply as the “Information Bureau” and since 1987 had consisted of Budai and Fülöp. Between the lines of this bureaucratic manoeuvre were preparations for the step that the Hungarians knew must soon come – their relinquishing of control over the organisation they had nurtured from birth.

That year, Budai and Fülöp were re-elected, and at the 1990 AGM, Budai was re-elected again, with Csaba Csáki becoming Secretary. But now the scene was set for the management of IAPS to pass away from Hungary altogether. In April 1991, we find Budai, ever the organiser, clearly knowing that he too must step down soon (perhaps he was due to graduate), writing to Vesa Tanner of the Finnish National Committee, describing that body as “the most reliable NC member of our organisation” and concluding that “the best place for the Central Office to be from September 1991 is Finland”. In the event, the CO moved to the Netherlands, and stayed there for two years, stewarded very successfully by Maarten Bruinsma, who then handed it on to a hyperactive Dane, Bente Hansen; IAPS was standing on its own two feet at last. Overall, until the abandonment of the Central Office concept in 2007 in favour of a multi-nation executive, IAPS was run from twelve different countries.

The number of ICPS participants grew steadily in its first few years. In 1989, there had been about 50 participants; the following year, the Dutch organisers planned for 125, but were swamped with applications and had to allocate places on a system of quotas for each country. In those early days, postgraduate students were not encouraged to attend; Budai suggested to the

organisers of ICPS1990 that PhD students be politely advised that “this is not your type of conference”, but this restriction was later dropped, and today postgraduates make up a large proportion – perhaps even the majority – of participants. Numbers eventually levelled out at about 350, which is a natural limit inasmuch as there are few lecture theatres that will hold more, and it is important for everyone to be able to attend the guest lectures and the ceremonies.

However, news of the conference did not spread evenly – even as late as 2004, the UK, for instance, despite having some 7,000 physics students, could hardly manage to muster more than a handful of ICPS delegates (although four years later, in Krakow, the UK & Eire formed the largest group). UK students had been attending the conference since 1987 on an individual basis, but there was no official presence in IAPS until Nexus, the UK/Eire physics students’ network, was formed in 1992 as a part of the Institute of Physics. Jonathan Fost, the founder of Nexus, attended ICPS in Lisbon that year with a colleague; “[we] were amazed by the reaction. It seemed as if every other country attended and they were amazed and elated that we were there ... despite the American, Russian and nearly every other European organisation of physics being represented we were still considered as THE Institute of Physics”, he said. Nexus played its part in publicising ICPS by awarding an annual lecture prize – free travel and entry to ICPS – to two students. Kathy Sykes, now Professor of Public Engagement of Science at Bristol University and a popular TV presenter, was one of those who took this route – she went to ICPS1995 in Copenhagen as a PhD student, and repeated her prizewinning lecture to an international audience.

The conference grew in duration too, from a few days to a week, and it also evolved. The basic elements were there from the start: student and guest lectures, scientific and cultural visits, and, of course, the parties. In addition, IAPS needed to hold an annual general meeting, and the conference was the natural venue for that too. By 1989, poster sessions had been introduced, and later other activities were added, some of which became regular features of ICPS, such as the National Party (introduced in 1996), team sports, and (from 2005) a Costume Party. Other events, such as workshops and debates, have appeared from time to time.

IAPS membership grew over the years, with national and local committees being set up in more and more countries, although member committees themselves came and went; for instance, countries like Bulgaria, Spain and Sweden, which have been prominent in the past, are not well represented nowadays. The association established its own Journal (JIAPS), and organised summer schools, exchange visits and short trips to scientific places of interest; however, ICPS remained the jewel in its crown. Twenty-three conferences have now been held (not counting an “informal” ICPS that apparently took place in Bulgaria in early 1990) in a total of 20 cities and 16 countries.

An annual visit to CERN in Switzerland was quickly established; Maarten Bruinsma’s presidential report to the 1993 AGM regretted that the visit had had to be cancelled that year “because it is an IAPS tradition from the very beginning”. Later, when CERN became a building site during the construction of the LHC, the trips became less frequent, but were replaced by visits to other places of scientific interest, such as the European Space Research and Technology Centre (ESTEC) in Noordwijk, Netherlands, and the UK’s JET fusion project and Rutherford Appleton Laboratory; there was also a visit to Turkey to see an eclipse of the Sun in 2006. As this article goes to press, there are plans for visits to Dubna in Russia, and to the site of the Chernobyl nuclear disaster.

Student exchanges remained a key activity, as confirmed in Bruinsma's 1993 report, and these too are still alive and well: in 2006, Katalin Gillemot from Budapest reported on a successful exchange between Hungarian and Norwegian physics students that she had organised, combining visits to the Central Physics Research Institute of the Hungarian Academy of Sciences (the institute that had helped to create IAPS in the first place) with cultural trips and also some "catastrophe tourism" which had been necessitated by the flooding of the Danube. Finally, there are the summer schools; these are organised on an occasional basis, but seem to have taken rather longer to get organised than originally foreseen, since a report of a successful school in Finland in 2004 on "the Role of Organic Aerosols in Cloud Formation" refers to "the first summer school" having been held in Portugal two years earlier.

The key to IAPS's survival, however, is undoubtedly the conference itself, and in turn, the secret of ICPS's success is its unique blend of the conventional components of a conference (lectures, posters, excursions etc) with the social side. At ICPS, almost every night is a party; there is the welcome party, the farewell party, and in between, the National Party, Costume Party and usually also an evening highlighting the customs and culture of the host country. If the budget can stand it, there may also be a barbecue or a conference dinner. The National Party is the most idiosyncratic of these, and encapsulates, in one evening, the spirit of ICPS. It would be more accurate to call it the International Party, as it is a celebration of the national food and culture of each participating nation. When it was introduced, in Szeged, Hungary, in 1996, "people liked the idea, and all the countries were participating", says Marton Major, one of the organisers that year, who went on to become the 10th President of IAPS. In the pre-conference circular, participants were given a choice between "products (special food, drink, clothing, photos) or presentation (songs, verses etc.) of your country"; most opted for the latter, but in later years the two strands became more equal, and the challenge – to produce something enjoyable and original with very sparse resources – has been met with much ingenuity.

First, stalls are set out, and each national group presents samples of food and drink (usually alcoholic), having prepared the former using whatever kitchen facilities can be found – anything from the main university refectory (e.g. Odense, Denmark, in 2003, and Bucharest, 2006) to a tiny hired kitchen in a backstreet (London, 2007, where the food preparation actually spilled out onto the pavement). Later in the evening, preferably when most of the food, and especially the drink, have been consumed, each group is called to the stage to perform some act, which may be song, dance, drama, mime, comedy, or any other kind of performance. In recent years, the National Party has featured a working chainsaw, a portable sauna, and male nudity, amongst many other things.

Not surprisingly, organising ICPS is the biggest challenge of all. The fee is deliberately kept low, so that students from poorer countries can attend. That means that most organisers will face a huge sponsorship target, amounting to perhaps half, or even two-thirds, of the total budget. And when the money has been found, there are all kinds of things to sort out – student accommodation, lecture theatres, guest lecturers, excursions, the conference handbook, the IAPS AGM, sporting events, lab tours, food, bars, and of course parties. Then there are some rather unusual challenges, specific to ICPS, and often met with very creative solutions. One task which crops up every year is how to get all the participants up in time for the excursions after a late party. In 2004, the Serbian organisers in Novi Sad found a novel way of doing this – they hired a

5-piece brass band to tour the corridors of the hostel at 7am until everyone was wide awake! In Helsinki in 1999, the Finns had a similarly inspiring idea – they moved the entire conference onto a boat for the last evening, and the closing ceremony was held on board, followed by an all-night party, while the boat went to Estonia and back. One year (it is probably best not to reveal the exact year or venue, to spare blushes) there was a mix-up over food, and some meals did not materialise. Luckily, the accommodation that year consisted of very modern student flats with superb cooking facilities, so no-one starved to death, although some participants did run out of money.

There have also been failed bids. Cambridge, Dubna, Stockholm, Italy, the USA, Greece and Nigeria have all developed proposals which reached the IAPS AGM, but no further – either because they were outvoted by other bids, or because they were only tentative ideas that were never firmed up. In 1994, the conference had a very narrow escape. Dublin had won the right to organise it that year, but the organisers were unable to raise sufficient sponsorship, and pulled out with only a few months to go. But one testament to the durability of ICPS is that it has never been cancelled altogether; even in 1994, the conference was hastily relocated to St Petersburg and went ahead without a hitch.

Stephan Witoszynskij, writing in JIAPS in 2004, recalled his experience of organising the second Vienna conference, in 1997. One particular headache he mentions is “the problem of visas. For some reason, the countries of the European Union seem to want to keep residents of some countries out ...” Right up to the opening ceremony, he had been frantically faxing and phoning the Slovenian embassy on behalf of a participant who was stuck at the border with a wrongly dated visa. This was not an isolated phenomenon; there are always visa problems. For instance, eight years after Witoszynskij’s marathon effort, Maria Joao Benquerenca did the same for a Pakistani delegate trying to get to ICPS in Coimbra, Portugal, and even paid for his air fare out of the conference budget. Both attempts succeeded at the eleventh hour, and the delegates got in.

Sometimes ICPS is arranged so as to coincide with another conference, such as that of EPS, so that participants can stay on for a few days and visit both. In 2002, when ICPS returned to Budapest, the EPS conference took place immediately after it, and the organisers negotiated a lecture slot at one of the plenary sessions of the senior conference, to be given to the winner of the ICPS “Best Lecture” competition; EPS saw this as a way of getting more young physicists to attend their event, which was traditionally dominated by elderly professors. Sam Henry, now a lecturer at Oxford University, won the prize that year; he recalls “... presenting my talk to lots of professional physicists in this huge auditorium, with, of course, a camera on me, projecting my image onto a screen behind me, which certainly wasn’t something you got at every conference!” But even those who do not get to speak at an EPS conference find ICPS a useful experience, especially if English (the official language of ICPS and IAPS) is not their first language. For instance, Piotr Hajac, who attended the very first ICSP in 1986 while studying in Wroclaw, Poland, certainly values his time in Budapest: “Speaking in English to a large international audience was a very important psychological experience that helped me a lot to handle such situations in the future”, he says. There have been many such situations for Hajac, judging from his CV; he is currently the director of the Noncommutative Geometry Independent Research Unit of the Mathematical Institute of the Polish Academy of Sciences in Warsaw.

IAPS occasionally ventures into such areas as ethics in science, and science policy. The late Sir Joseph Rotblat was an honorary member, and gave a lecture (at the age of 93!) entitled “Preservation of Life in the Nuclear Age”, at ICPS2001 in Dublin; the talk prompted a spontaneous mass signing of the Pugwash Pledge. (Rotblat was remembered at ICPS2008, which was held in his home country, Poland, in the centenary of his birth, by the showing of a film about his life and Pugwash). Another honorary member, Sir Arnold Wolfendale, was a guest speaker at ICPS2000 in Zadar, Croatia, and also sat in on a Round Table discussion of the shortage of jobs for graduates, particularly outside the USA and the former Western Europe. Out of this discussion came a position paper dubbed the “Zadar Manifesto”; it drew attention to the problems faced by physics students in some countries, including “the lack of long-term security” and “lack of autonomy”, as well as pointing out that “many physics students are not able to remain in their countries to perform high quality research”, and “many ... are not able to remain in their own preferred field”. Sir Arnold recalls this being sent to a large number of important people, including UNESCO.

At IAPS’ 18th birthday, in Coimbra in 2005, Ván, Budai, Horváth, Lévai and Fülöp were all made honorary members.

Jelmer Renema, a student at the University of Leiden in the Netherlands, is the current Treasurer of IAPS. “Looking back on the rich history of IAPS”, he says, “we can only admire the pioneering spirit of our predecessors, as they realised their vision in the aftermath of communism. These people deserve our respect, and it's great to hear that those who have been instrumental in making IAPS a success feel that they have gotten so much out of it. Our conference, ICPS, continues in the spirit of openness and friendship that has made it so succesful in the past. In the future, IAPS will continue its efforts to create a truly international network of physics students from all corners of the globe.”

The pioneers of ICPS and IAPS do indeed look back on their work with fond memories, and are pleased to see their creations looking so healthy. Tamás Fülöp is currently working in Prague, researching the physical aspects of boundary conditions in quantum mechanics. He says he learned a lot from the five ICPSs he attended between 1986 and 1990 – about physics, and about people: “The atmosphere of the conferences was very warm and friendly. It impressed me very seriously that, irrespective of linguistic, cultural or other differences, people gather to be together, to scientifically interact, and to cooperate in an open way. It opened my personality a lot, too”. And Péter Ván, when I first contacted him, was busy organising another conference, which he hoped would “build a bridge between engineering, applied and fundamental theoretical research”. It will be a small conference, he said, “but we are a good team, and want to set up an international organization ...”

Jim Grozier.

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Norman Davies: *Europe: A History* (OUP, 1996); Péter Ván, Tamás Fülöp, Piotr Hajac, Jonathan Fost, Kathy Sykes, Marton Major, Sam Henry, Sir Arnold Wolfendale, Jelmer Renema, Michael Pienn – personal communications; *Nexus News*; JIAPS; IAPS archive.