Outreach, Outreach, Outreach

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In the warm afterglow of the magnificent Kyoto Congress, readers of *Physiology* might well imagine the officers and council of IUPS taking a relaxing break. Certainly, some congratulations are in order. As the documentary videos on the IUPS website show, it was a brilliant event, all the way from the opening by the Crown Prince of Japan, through the often amazing quality of the science presented, then finally to the emotionally moving closing ceremony, where the IUPS flag was passed on to the United Kingdom. So we sent a well deserved congratulatory message to all the members of the Japanese organizing committees and societies involved. Our former President, Akimichi Kaneko, handed the messages out personally at their last organizing committee meeting. They certainly deserve a relaxing break! But, for IUPS, and for the organizers of 2013, this is where the work begins.

First, it was necessary to establish the IUPS secretariat at Case Western Reserve University, where Walter Boron, the new Secretary-General, is located. Much of the work during the first months of this year was the transfer of administration from Sue Orsoni in Paris to Leslie Price, the new manager, at Case. This included the integration of secretarial and financial aspects, as recommended by the Long-Range Planning Committee.

Ole Petersen referred warmly to Sue Orsoni's highly valued work for IUPS in his December 2009 editorial. I wish to add my personal thanks to Sue, who first started working for IUPS during the organization of the Paris Congress of 1977. Her 35 years of service were recognized with presentations at the General Assembly in Kyoto and by the Executive Committee in May of this year. She has agreed to act as a consultant to IUPS in its outreach project on membership.

Outreach is the keyword for this year. During the Closing Ceremony in Kyoto, I said "What on earth does IUPS exist for? We need to give back to you, to the young and upcoming physiologists the conviction that we are creating the environment in which our subject can flourish, and flourish effectively. What we are going to do with regard to the activities of IUPS is to greatly expand the outreach to the community, not only to our fellow physiologists, but also to the general public, and for that reason, we have taken decisions at Council meetings here to see how we can expand our membership."

First of all, let me address outreach to our member societies and adhering bodies. Ideally, IUPS should be the servant of its member societies, operating more like a Federation, with the member societies having a real say in the way in which IUPS is organized and how it develops policy. We are therefore consulting member societies on how they can be given a greater role in IUPS. The proposal developed by the Executive Committee is that the larger member societies should have the right to nominate IUPS Representatives, with smaller societies doing so through their regional organizations.

The proposed roles of these Representatives are outlined in detail in the outreach strategy proposal already circulated to societies and available also on the IUPS website. One role of these Representatives would be to form an advisory group from which a proportion of the Nominating Committee should be chosen. This bottom-up approach will provide for the first time a mechanism for members to participate in the selection of future officers and council members. The Representatives would also act as the routine liaison between IUPS and the member societies, having the right to put proposals to the Executive and Council, and in turn communicating IUPS affairs to their societies. I should emphasize that this outreach strategy proposal is a consultation document. We look forward to receiving reactions as we move IUPS governance into the 21st century. The mechanisms that were appropriate in 1953 (when IUPS was founded) were restricted by the slowness of communications and their great cost–remember the days when an international telephone call cost a small fortune? Today, we are all connected by e-mail, Skype, and many other inexpensive forms of communication. There is no reason why we should wait for the quadrennial General Assembly at each Congress to interact effectively together. Moreover, delegates often feel that most decisions had already been made and that the General Assembly acts merely as a rubber stamp. Under the outreach strategy proposal, the General Assembly would still, under the constitution, be the final arbiter for major decisions, such as electing officers and council members, and deciding on bids for future congresses. However, those assemblies could work more effectively on the basis of interactions among the Representatives (many of whom would be delegates) during the years between each Congress. As a result, as delegates to the General Assembly, we would be making decisions to which many had contributed.

The second outreach project will follow up on a recommendation of the Long-Term Planning Committee: "The role of IUPS should be a global one. While its congresses, meetings and organisation are naturally dominated by those regions of the world where our science is well-developed, they represent only 10–15% of the world's population. IUPS has an obligation to the 85–90% in the developing world, the under-developed world and what are called the 'war zones.' It should be a world beacon . . . . Ways should be found to increase participation from poor and developing countries."

We are establishing a small team to help the Council member, Saeed Semnanian (Iran), with responsibility for membership, to reach out toward those parts of the world where physiology is not represented in IUPS, and toward societies whose membership of IUPS has lapsed. In my speech at the closing ceremony I said, "It would be good to target to ensure that at least half of those we have lost in recent years are back in the fold by the time of the next Congress, and that at least some of the countries that have never interacted with us come to the next Congress." In the natural pleasure that we all feel that over 4,000 people came to the Kyoto meeting, we can easily forget that there are many countries from which no one came. Physiological science is just as important to education, research, and advances in medicine in, say, North Korea, Burma, Burundi, Bolivia, Afghanistan, as it is in the U.S. or Japan–in some respects,

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even more so. Education and health are the keys to prosperity. We are working on ways in which we could encourage attendance at IUPS meetings from countries that have never sent their scientists. A world-leading corporation has already offered to cover the air fares for some scientists from one of the countries named above, and we look forward to more generosity of this kind. It is in the interests of business and finance that we should succeed. For relatively small investments, they could ensure success. This is the project on which Sue Orsoni has agreed to be a consultant and help us, by bringing her long experience of issues of membership in various parts of the world.

The third outreach initiative concerns communication. Our predecessors on Council took a lead here in appointing a member of council, Marjan Rupnik (Slovenia), to be responsible for the IUPS website. He has already greatly improved the appearance and functionality of the website. It has documentary videos on it for the first time, due to filming kindly provided at the Congress by the Director of Voices from Oxford, Dr. Sung-Hee Kim, wife of a just-retired Council member, Yung Earm (Korea). More recordings of the Congress are in the pipeline, including one or two of the plenary lectures. Enlivening the website with video material is just a beginning. Marjan Rupnik will now lead an initiative to find ways of developing the website, and the general appeal of IUPS.

As these three initiatives develop, we will also consider how to improve the financial base of IUPS. We are greatly restricted in what we can do, particularly in helping young scientists and scientists in the under-developed regions of the world, by lack of resources. Perhaps, as the world emerges from the deep recession, we will find the support we need from the worlds of industry and finance. Other international scientific unions do this better than we do. We are establishing closer links with our colleagues in other biological science unions. In some of our outreach projects, collaboration with them may make it easier for all of us.

Finally, we need to improve outreach to the physiological sciences themselves. At the end of my speech at the Closing Ceremony in Kyoto, I concluded, "the story, I think, is one of an upswing towards our subject, the need to find ways of riding that effectively, doing it in collaboration, of course, with our colleagues in the biochemical, molecular biological and genetic and related disciplines, including, I want to add, the discipline of biology itself. Some of the most exciting areas I suspect in the next decade or two are going to be ways in which what we do can start to link back, as we once did, into the mainstream of biology in relation to areas like epigenetic, developmental biology, and evolutionary theory."

Upswing? Those who attended Kyoto 2009 could hardly doubt that. The science was not just amazing. Some of the ways in which physiology is now connecting with molecular biology and genetics are absolutely awesome, involving as they do the integration of genomics and proteomics into functional understanding at higher levels of the organism. We can now do that in ways that would have been inconceivable just two decades ago.

But why do I single out connecting to the mainstream of biology itself? The reason is that, through the development of what many of our colleagues in the biological sciences call "systems biology," we are beginning to appreciate (or, rather, rediscover) the fact that the lower levels, such as the genome itself, necessarily require physiological understanding for their interpretation. Barbara McClintock (Nobel Laureate and the discoverer of jumping genes) rightly called the genome "the organ of the cell" (5). The idea, so central to the neo-Darwinian view of evolution, that the gene is the target of selection and is the controller of the organism relegated the organism itself, and its development, to the role of a transient carrier of its genes. But now that, through the rapid development of epigenetics (2), the realization that mutations are not random (8), that some forms of inheritance of acquired characteristics are returning to haunt those who thought that the idea was dead and buried (7), we physiologists are back in the mainstream (6). The development of the organism and its functionality at higher levels necessarily plays a major role in what determines the evolutionary process. Inheritance goes beyond what we now call genetics (4).

We may be somewhat amused that "systems biology" is the route through which many of our fellow biological scientists are rediscovering the real nature of biology. After all, we physiologists have been "systems" people for a long time; at least since Claude Bernard (1) first introduced the idea of control of the internal environment, which we now realize also includes nurturing, correcting, and even changing DNA sequences (9), and possibly ever since Jean Fernel (Ref. 3; see Ref. 10) introduced the term *physiologia*. But we should also remember the parable of the prodigal son. Let's welcome back the lost sheep. ■

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