



IUBS: International Union of Biological Sciences

<http://www.iubs.org>

Executive Summary: The International Union of Biological Sciences (IUBS; founded in 1919), which is celebrating its 100th anniversary in 2019, promotes open science and open data policy and guidelines in the domains of bio-nomenclature/biodiversity, public health, agriculture, etc. It is taking a leading role in Convention of Biodiversity (CBD), Climate Change Education, Open Biodiversity and Health Big Data (BDHD), etc. IUBS itself has aligned with the changing world of the 21st century by closely working with other science and social science unions in addressing the challenges posed by global warming, deforestation, increased human/livestock migration, rapid urbanization, invasive species, new epidemics, etc. The international scope of the scientists that IUBS can bring to bear on the relevant issues is its major contribution to both science and leadership.

IUBS: its glorious history: IUBS was founded in 1919. At that time, Biology was one discipline. IUBS initiated the International Committee on Nomenclature and has sponsored the International Commission on Zoological Nomenclature (ICZN) for many years. Several IUBS scientific members dealing with this topic have their origin either in former IUBS commissions or sessions in its Congresses: they include the International Association for Plant Taxonomy, International Commission on the Taxonomy of Fungi, International Society for Phylogenetic Nomenclature, International Commission for the Nomenclature of Cultivated Plants, Organization for the Phyto-Taxonomic Investigation of the Mediterranean Area, Biodiversity Information Standards (Taxonomic Database Working Group).

Subsequently, with deeper and wider scope of its understanding, biology's sub-disciplines became more prominent and thereby many new Unions emerged from IUBS – for example, the International Union of Microbiology Societies (IUMS), International Union of Biochemistry and Molecular Biology (IUBMB), International Union of Physiological Sciences (IUPS, from which International Union of Basic and Clinical Pharmacology was spun off) and even the International Union of Psychological Science (IUPsyS) was briefly a Section of IUBS in the Division of Zoology, before gaining Union status in 1955 of then International Council for Science (ICSU; now International Science Council, ISC).

IUBS: its global position in the past two decades, an introspection: As Biology became too vast a discipline and with exponential increase in the size of the community, it resulted in more and more sub-disciplines trying to address biological phenomena in isolation. It also changed the way Biology was funded globally, by public funding agencies, or charity trusts or R&D funding by profit-oriented companies. They all aimed at achieving focused deliverables in the shortest time periods. Added to this, experimental technology and data handling ability were limited to make this vast field more integrated to address biological questions at the systems-level. This resulted in the decline of importance of looking at Biological phenomena at holistic-levels. IUBS was badly hit by this as its financial resources were diminished, truncating its ability to play an advisory role. This relative inactivity, in turn, resulted in it becoming less visible.

IUBS as a global leader in Integrated Biological sciences in the 21st Century: With better understanding of Gene-Environment interactions and ease of handling large amounts of data coming from genomics, proteomics, metabolomics and phenomics, 21st century biological science is all about integrated approaches to study living systems along their entire scale of



size and spectrum of complexity, from chemistry to biochemistry to physiology to organismal to population to ecosystem. This has made IUBS prominent again. Additionally, the impacts of climate change, rapid urbanization, and decreased forest cover have emphasized the importance of activities (such as biodiversity, ecology and evolution, bio-nomenclature, taxonomy etc.) that are traditionally represented and supported only by IUBS among the science unions. This is reflected in the fact that IUBS was leading the biocluster of the International Council for Science (ICSU) just before its merger with ISSC to form International Science Council (ISC).

More importantly, IUBS is leading the Science of Biodiversity forum at COP-CBD in framing science-based policy and guidelines on conservation, open access to information/knowledge and access to benefit sharing. IUBS has been invited by the European Commission to translate the outcomes of global science-policy processes on biodiversity and ecosystem services into action at the European scale and, vice versa, to ensure that European science-policy processes contribute to the global debate and action. IUBS is also an active member of the Regional Bio-Bridge Initiative for Western European and Others Group (WEOG) to provide scientific and technical inputs to achieve their national biodiversity targets.

Finances vis-à-vis IUBS activities: IUBS functions with minimal operational costs/secretariat expenses. Although it is a small Union and its finances are at sub-optimal levels, it has been able to provide financial support to initiate a relatively large number of international programs, which in turn have resulted in major international research programs such as Integrated Climate Change Biology (iCCB), Biological Consequences of Global Change (BCGC), International Commission for Bionomenclature (ICB), Unifying Biology Through Informatics (UBTI), Open Biodiversity and Health Big Data (BDHD), AgroEcosystems: managed pollinators, and Pastoralism. IUBS is the lead partner in ISC (formerly ICSU)-sponsored Climate Change Education program (TROP ICSU) involving a large number of other unions representing different disciplines of sciences and social sciences. IUBS has committed financial support too for this from its own resources. IUBS is also a partner, both in activities and in providing financial support, to the Gender Gap project of ISC (formerly ICSU). In addition, IUBS supports many conferences, particularly to facilitate participation of young scientists.

Over the past 5 years, IUBS has increased its activity several fold and has a healthy inflow of funds, but has kept operational costs/secretariat expenses exactly the same, thus making it one of the most cost-effective organizations.

For additional information/clarification: contact,

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