

IUBS and inter Unions/ Organizations projects:



➤ **Climate Education :**

The project "TROP-ICSU: Trans-disciplinary Research Oriented Pedagogy for Improving Climate Studies and Understanding" was initiated in 2017 by IUBS and INQUA with different partners: IUSS, IMU, IUGS, IUGG, IUHPST, IUFRO, ICSU ROA, ICSU ROLAC, UTPL, Insa, NFS, AAS, Imaginary, WCRP, WMO, UNESCO. The financial support of ISC that stopped in 2019. The project is presently supported by IUBS.

Only few in presence training workshops could be organized in 2020: A TROP ICSU Lesson Plan Development [Workshop](#) oriented towards Australian curricula was conducted at the Australian Meteorological and Oceanographic Society's national conference in Fremantle, Western Australia on 14 February 2020

In October 2020 the project crossed the mark of [a hundred lesson plans](#) developed. Some resources have been translated in [various languages](#). Some lessons plans have been equipped with [video tutorials](#) useful both for teachers and self-learners. A webinar series was launched with Centre for Cellular and Molecular Biology ([CCMB](#)), India on [Climate Change Challenge 2.0](#).

The project was presented at ICG Dehli.

<https://tropicsu.org>, <https://climatescienceteaching.org>



➤ **Standing Committee on Gender Equality in Science :**

At the end of the [project](#) "A Global Approach to the Gender Gap in Mathematical, Computing, and Natural Sciences: How to Measure It, How to Reduce It." The different partners decided to create a network on Gender Equality. IUBS with IMU, IUPAC, IUPAP and IUHPST worked on and MoU that was signed by different partners. The [Standing Committee on Gender Equality in Science](#) came into force at the first coordinating meeting in July 2020. Guy Smagghe from the IUBS Executive Committee is co-chair of SCGE. A statement on Gender Equality in times of Covid-19 was published at the end of 2020.



➤ **5th Science for Biodiversity Forum :**

Since 1998, IUBS has been actively partnering with the Secretariat of the Convention on Biological Diversity to organize with other organizations the [Science for Biodiversity Forum](#) in junction with the COP on Biodiversity. The COP of 2020 in Kunming China has been postponed to October 2021 as well as the joint event gathering the 5th Science for Biodiversity Forum and the 8th International Conference on Sustainability Science. Presently IUBS and Tokyo University will sponsor [an online event](#) that will take place before the in-presence meeting.

➤ **International Year of Basic Science for Sustainable Development:**

Several international scientific unions including IUBS wish to act together as the founding unions to organize the [International Year of Basic Sciences for Sustainable Development](#) under the aegis of UNESCO. Lily Rodriguez from IUBS is the vice-chair of the Executive Committee. Several online meetings with the different partners have been organized in 2020.

The programmes have been reviewed and approved at the General Assembly in 2019.

➤ **BHBD, open Biodiversity and Health Big Data:**

Over the past year, the BHBD programme has been mainly focusing on the scientific research and international collaboration in response to the COVID-19 pandemic. Significant progress has been achieved on the construction of the 2019 Novel Coronavirus Resource (2019nCoV), tracing of virus origins, dynamic monitoring of virus genomes, virus variation analysis and literature mining. As of December 2020, 27 organization members from 12 countries have joined the BHBD Alliance.

Events organized in 2020 by BHBD:

- The 2020 Annual Meeting of BHBD Alliance. July 21, 2020, online, 20 participants. Countries involved: Brazil, China, France, Pakistan, Russia, Saudi Arabia, Thailand.
- The 5th Big Data Forum for Life and Health Sciences, October 15, 2020, online, 500 participants. Countries involved: China, Sweden, UK, USA.
- Webinar on COVID-19 Resources. December 4, 2020, online, 30 participants. Countries involved: Brazil, China, Iran, Malaysia, Pakistan, Russia, Thailand.

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➤ **GIPP, Global Integrative Pastoralism Program**

The program was adapted to focus on the establishment of partnerships critical for the development of its aims as well as marketing the relevance and collaborative needs. identified synergies with other organizations and established collaborative initiatives such as joint website development - notably with the League of Pastoralist People and their reserved web space (<http://www.herding.community/>) – as well as joined efforts in the design of data leveraging and mapping.

Events organized in 2020 by GIPP :

- 16th -19th February, Limuru (Kenya) – coordination meeting for project kick-off coinciding with Pathways Africa 2020 conference. 3 participants of the advisory board (Kenya and Finland), plus other 10 participants from Kenya, the USA, the UK, Tanzania, Ethiopia, South Africa, and the Netherlands.
- March: Working group/Writing retreat Helsinki (board members and invited authors) to complete figures and writing for framework paper along advisory board meeting
- Other planned meetings had to be cancelled due to the COVID-19 impact: At the Joint XXIV IGC and XI IRC Congress in Nairobi (delayed until October 2021). At FAO's Pastoralist Hub annual Partners' meeting (held virtually)

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IUBS scientific programmes



➤ **Working Group on the Governance of Taxonomic Lists**

In February 2020 the first of a series of three IUBS supported workshops was held in Darwin Australia to help develop a governance framework for taxonomists and the users of taxonomy that they can then use to decide which names should be used by society, while continuing to encourage taxonomic research. The purpose of the workshop was to start resolving the outstanding issues surrounding a set of principles for unified list creation and refine them for publication as the first stage in developing a conversation among the global community of taxonomists and the users of taxonomy.

Events organized in 2020 by Taxonomy project :

- Workshop 1 on the Governance of Taxonomic Lists, Monday 10th February to Wednesday 12th February 2020, Research Institute for the Environment and Livelihoods, Charles Darwin University, Ellengowan Drive, Casuarina, Northern Territory, Australia, involving 16 participants from Australia, Austria, Belgium, India, Netherlands, New Zealand, Russia, United Kingdom, USA
- Online meeting: 29 October 2020
- Online meeting on 2nd December 2020, 27 participants.

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➤ **Conservation PaleoBiology in Africa (CPiA)**

In 2020, the core group of Conservation Paleobiology in Africa program collaborated remotely to write a research grant to be submitted to the NSF-NERC program that will amplify the outreach and research of the CPiA program.

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IUBS new initiatives



➤ **IUBS Working Group on Zoonotic Diseases:**

In 2020 IUBS established a Working Group on Zoonotic Diseases in order to adopt an integrative, multi-disciplinary approach to understand the factors affecting the prevalence of zoonotic diseases. The diseases can be virus, bacterium or a host of many other parasites. Both human and animals can be natural reservoir of these pathogens, which circulate between people and animals. Therefore, involving multiple life sciences such as zoology, ecology, epidemiology, molecular biology, climate change biology, environmental biology is necessary to inform the policy making realm.

The coordinating meeting with the different experts of the group was organized online on 29 September 2020. A series of mini-conferences is planned in 2021.

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IUBS new initiatives



➤ **IUBS Working Group on Gender Equality:**

The WGGE's primary objective is to ensure that there is a fair gender representation in all activities conducted by the Union. The IUBS policy is regularly reviewed, and new propositions are made to the Executive Committee.

The group organized several online meetings in 2020 and submitted an article in Pure and Applied Chemistry Journal that will have a special issue on Gender Gap.

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➤ **Environmental Education and Climate Resilient Plants**

After the second review following the General Assembly, the project was approved as a new initiative.

The initiation workshop on "Environmental Education and Climate Resilient Plants" was organized through Video Conferencing on December 28, 2020 from 7 pm to 11 pm (IST). In this workshop 14 leaders from 10 countries (China, Germany, Finland, Bangladesh, Spain, USA, Ecuador, Mexico, Nepal and India)

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IUBS Webinars series

To commemorate completion of 100 years of promoting excellence in biological sciences, IUBS has launched [a webinar series](#) bringing the best of all disciplines to discuss evolution, taxonomy, ecology, biodiversity and other topics that represent unified biology and the topics of prime importance to address contemporary problems such as climate change, endangered species, health...

The first lecture of the webinar series was delivered by [Rattan Lal on 2nd October 2020](#).

Conferences sponsored by IUBS

The conferences have been postponed due to the Covid-19 pandemic and should be organized in 2021 either online or hybrid.

- 26th International Diatom Symposium, Japan
- [ICZ](#), International Congress of Zoology. South Africa with 2 sessions to be organized by IUBS.

Young scientists sponsored by IUBS

- The 26th International Diatom Symposium, Japan, has been postponed due to the Covid-19 pandemic and should be organized in 2021 online

IUBS representatives participated in:



Apart from the different meetings mentioned above, IUBS representatives also participated in:

- Higher Education: global engagement to deliver the Sustainable Development Goals 2030, 27-29 January 2020, Wilton park, West Sussex UK, [report here](#)
- UNESCO celebration of the [International Day of Women and Girls in Science 2020](#), 11 February 2020, Paris, France
- UNESCO, section of Education for Sustainable Development, meeting on 11 February 2020, Paris, France
- the Second Meeting of the Open-ended Working Group on the Post-2020 Global Biodiversity Framework, 24-29 February 2020, Rome, Italy
- ISC Committee for Outreach and Engagement
- Women's Month Webinar, Tackling Global Challenges with Solutions that Work", 20 August 2020, South Africa
- Imaginary, meeting on *10 min exhibition kits*, 17 September 2020, online

Meetings for IUBS governance : Executive Committee meeting, 7 & 8 July 2020, online

Publications

BHBD:

- Database Resources of the National Genomics Data Center, China National Center for Bioinformation in 2021. CNCB-NGDC Members and Partners. *Nucleic Acids Res.* DOI: 10.1093/nar/gkaa1022.
- The global landscape of SARS-CoV-2 genomes, variants, and haplotypes in 2019nCoV-R. Song, S. et al. *Genomics Proteomics Bioinformatics.* DOI: 10.1016/j.gpb.2020.09.001.
- Evolutionary and structural analysis of SARS-CoV-2 specific evasion of host immunity. Hussain I. et al. *Genes & Immunity.* DOI: 10.1038/s41435-020-00120-6.
- Molecular evolutionary and structural analysis of human UCHL1 gene demonstrates the relevant role of intragenic epistasis in Parkinson's disease and other neurological disorders. Nawaz, M. S. et al. *BMC Evol Biol.* DOI: 10.1186/s12862-020-01684-7.
- Comparative Plastomics of Ashwagandha (*Withania, Solanaceae*) and Identification of Mutational Hotspots for Barcoding Medicinal Plants. Mehmood F. et al. *Plants.* DOI: 10.3390/plants9060752.

GIIP

- Manzano, P.; Burgas, D.; Cadahía, L.; Eronen, J.; Bencherif, S.; Holland, O.; Seitsonen, O.; Byambaa, B.; Fortelius, M.; Fernández-Giménez, M.; Galvin, K.A.; Cabeza, M.; Stenseth, N.C. (forthcoming) Towards a holistic understanding of pastoralism. *One Earth* (last round of revision, no DOI yet).
- Manzano, P.; Galvin, K.A.; Cabeza, M. A global characterization of pastoral mobility types. *Open Anthropology Research Repository.* DOI: 10.1002/oarr.10000335.1
- Sharifian Bahraman, A., Fernández-Llamazares, A., Wario, H.T., Molnár, Z. and Cabeza, M. Dynamics of pastoral traditional ecological knowledge: a global state-of-the-art review (in review, *AMBIO*)

CPiA

- Bakker FT, Antonelli A, Clarke JA, Cook JA, Edwards SV, Ericson PGP, Faurby S, Ferrand N, Gelang M, Gillespie RG, Irestedt M, Lundin K, Larsson E, Matos-Maraví P, Müller J, von Proschwitz T, Roderick GK, Schliep A, Wahlberg N, Wiedenhoeft J, Källersjö M. 2020. The Global Museum: natural history collections and the future of evolutionary science and public education. *PeerJ* 8:e8225 <https://doi.org/10.7717/peerj.8225>
- Head JJ, Müller J. in press Late Miocene amphibians and squamates from the United Arab Emirates: Dispersal timing and paleoenvironments in the Arabian Peninsula. In: *Sands of Time: Late Miocene Fossils from the Baynunah Formation, U.A.E.*, edited by Faysal Bibi, Brian Kraatz, Mark Beech, and Andrew Hill. Springer.
- Lawing AM, Blois J, Maguire K, Goring S, Wang Y, McGuire JL. 2021. Occupancy models reveal regional differences in detectability and improve relative abundance estimations in fossil pollen assemblages. *Quaternary Science Reviews.* 253:106747. <https://doi.org/10.1016/j.quascirev.2020.106747>
- Shorf RA, Pinson K, Lawing AM. 2021. Comparison of environmental inference approaches for ecometric analyses: Using hypsodonty to estimate precipitation. *Ecology and Evolution.* 11: 587-598. <https://doi.org/10.1002/ece3.7081>

Taxonomy

No articles published in 2020 but one resubmitted after review and 2 drafted.