

International Year of Basic Sciences for Sustainable Development in 2022, under the auspices of UNESCO

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Chair of the Steering Committee of the
International Year of Basic Sciences
for Sustainable Development in 2022 (IYBSSD 2022)

Basic Sciences under the spotlight

- 🌀 Curiosity driven, inquiry research, where serendipity plays a role
- 🌀 Often forgotten by policy makers because basic sciences are not driven by short term applications
- 🌀 Fill the pool of knowledge that future generations will use for their applications
- 🌀 Source of disruptive innovations
- 🌀 Viewed from the past, basic sciences are the foundations of sciences and serve education
- 🌀 Facilitate open multicultural dialogue

Steering Committee

Leading Union



<https://www.iybssd2022.org/en/home/>

Support

- 🌀 93 science academies, scientific networks and learned societies
International Advisory Committee
- 🌀 30 Nobel laureates and Fields Medalists
- 🌀 UNESCO, World Science Forum, Club of Rome, Inter Parliamentary Union

Executive Committee

- ☾ Michel Spiro, IUPAP, France, Astroparticle physics, Chair
- ☾ Lily Rodriguez, IUBS, Peru, Biology, Vice-Chair
- ☾ Prajval Shastri, IAU, India, Astrophysics, Vice-Chair
- ☾ Jean Tran Thanh Van, Rencontres du Vietnam, Vietnam, Theory, Vice-Chair
- ☾ Bruce McKellar, IUPAP, Australia, Nuclear Physics, Treasurer
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- ☾ Marian Asantewah Nkansah, IUPAP, GYA, Ghana, Chemistry
- ☾ Maurizio Bona, CERN, Italy, Switzerland, Science Policy
- ☾ Merièmè Chadid, IAU, UNESCO-IBSP, Morocco, Astrophysics
- ☾ Laura McConnell, IUPAP, USA, Chemistry
- ☾ Ahmed Fahmi, UNESCO, Iraq, Italy
- ☾ Amal Kasry, UNESCO, Egypt

Rationale

- 🌀 **Basic sciences** are not always and everywhere considered as they deserve, in the discussions concerning the **societal, environmental and economic development**
- 🌀 **Curiosity-driven sciences** construct the pool of knowledge which future generations will use for their development
- 🌀 **Curiosity-driven sciences** re-enchant our world and make it worth to be sustainable
- 🌀 **Many scientific disciplinary international years** since the beginning of the 21th century: an international year concerning **all basic sciences and interdisciplinarity** will build on these
- 🌀 **2022 is mid-term for Agenda 2030**
- 🌀 **2022 is a year of celebration** for several **scientific unions** and learned societies centenary

Examples

- ☪ Vaccines and treatments against COVID-19 are full of basic biology (DNA, RNA, etc.)
- ☪ The WEB was born at CERN from the needs of fundamental science
- ☪ Google research engine comes from a brilliant mathematical idea
- ☪ Artificial intelligence relies on statistical methods
- ☪ Cellular phones are full of transistors, integrated circuits, WiFi, code, etc.
- ☪ GPS relies on General Relativity and on quantum atomic clocks
- ☪ The Genome Project has opened the way to gene therapies
- ☪ PET scan and MRI are based on antimatter physics and fundamental atomic magnetism
- ☪ Generation and storage of renewable energy depends on advances in physics, chemistry and materials science
- ☪ Reduction in pollution and green chemistry rely on basic advances in chemistry

Support for IYBSSD 2022

- Proposal in January 2017 to the **International Basic Sciences Program of UNESCO**
- Support from several scientific unions and research organizations as well as **ISC** and **UNESCO-IBSP**
- Resolution adopted by **UNESCO General Assembly** in November 2019 (Jordan, Russia, Vietnam, Nigeria)
- Welcomed in the final resolution of the **World Science Forum 2019** in Budapest
- Resolution adopted by consensus by the **76th United Nations General Assembly** in December 2021 (brought by Honduras with the support of Armenia, Azerbaijan, Bahrain, Bolivia, Brasil, Burkina Faso, Chad, Chile, Colombia, Cuba, Dominican Republic, Ecuador, El Salvador, Fiji, Georgia, Guatemala, India, Indonesia, Israel, Japan, Jordan, Kyrgyzstan, Malawi, Nicaragua, Panama, Paraguay, Peru, Philippines, Qatar, Russian Federation, Saudi Arabia, Serbia, Spain, South Africa, Thailand, Vietnam)

Tentative list of topics

- 🌀 Basic Sciences, Multicultural Dialogue and Peace
- 🌀 Basic Sciences, Education and Human Development
- 🌀 Basic Sciences and Women and more generally Equity, Diversity and Inclusion
- 🌀 Basic Sciences, Innovation and Economy
- 🌀 Basic Sciences, Health and Life Sciences
- 🌀 Basic Sciences and Global Challenges (climate, biodiversity, water...)
- 🌀 Basic Science as a Global Public Good
- 🌀 Basic Sciences and hazards
- 🌀 Basic Sciences and Big Data

International events

- 🌀 Opening ceremony, UNESCO headquarters, Paris - July 8 2022 – delayed due to the late proclamation
- 🌀 Conference on ethics and basic sciences, ICISE, Quy Nhon, Vietnam - September 13-16 2022
- 🌀 Closing ceremony, CERN, Geneva - third quarter-2023
- 🌀 World Science Forum, Cape Town - 6-9 December 2022
- 🌀 Latin America conference, Honduras (?) – 2023
- 🌀 Flagship international events. Ex: Global Women Breakfast

Other events

- 🌀 Global, regional, national, local events, in developed and in developing countries
- 🌀 Organized or endorsed by Steering Committee and International Advisory Committee members
- 🌀 UNESCO Chairs and Category 2 Centers, as well as World/International Days (esp. World Science Day for Peace and Development, 10 November)

Possible resulting actions

- 🌀 Implementation of open access publishing for all basic sciences papers
- 🌀 Promote equity, diversity and inclusion into collaboration in basic sciences
- 🌀 Promote training and education to basic sciences in developing countries
- 🌀 Develop basic tool kits to support science-based decision making
- 🌀 Develop communication material that enhances the importance of basic sciences (ex. COVID-19)
- 🌀 Decade of basic sciences for sustainable development

Thank You

We count on you all for all that!!!