Lightsources for Africa, the Americas, Asia and Middle East Project (LAAAMP): An IUPAP and IUCr ICSU-Funded Project

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Abstract. We describe a new initiative funded by a 3-year, 300K-Euro grant from the International Council for Science (ICSU) to the International Union of Pure and Applied Physics (IUPAP) and International Union of Crystallography (IUCr) in collaboration with over thirty partner organizations that include sixteen Advanced Light Source (AdLS) facilities to enhance the utilization of advanced light sources and crystallography in five targeted regions of the world, namely Africa, the Caribbean, Mexico, Southeast Asia, and Middle East. LAAAMP’s programs include the development of a Strategic Plan for each region; a Colloquium program that sends experienced light source and crystallography users to those regions; establishment of new IUCr-UNESCO Crystallography OpenLabs; design and distribution of a Brochure that describes advanced light sources and crystallography for government officials and the public; 2-month Faculty-Student (FAST) team training visits to advanced light sources, with approximately forty new users participating in 2018; and culminating in a December 2019 meeting to chart a path forward beyond the ICSU grant.

Key words: Synchrotron, Outreach, Capacity Building.

Text. Synchrotron light sources are the most sophisticated example of an open and multidisciplinary research infrastructure. Because of their high costs and multidisciplinary use, AdLS facilities provide strong opportunities for integration through networking and cost-sharing, and promote multi-disciplinary collaboration with the wider global community, while promoting science diplomacy and peace at large. Thus, AdLSs have become prime enablers of scientific and technological progress and innovation, conducive to sustainable development in line with the United Nations 2030 Agenda. AdLSs have revolutionized research in many science and technology disciplines, leading to a proliferation of facilities worldwide. The website lightsources.org has links to some 47 facilities in 23 countries in various stages of operation, construction or planning. However, the UVX at the Brazilian Synchrotron Light Laboratory (LNLS) is the only synchrotron facility operating in Latin America. Interestingly though, such a facility has generated so much in terms of scientific and technological activities, job opportunities, collaborations at the national, regional and international levels that as a result of this process of expansion, the new facility Sirius is currently under construction at the LNLS. Discussions have started about the construction of AdLS facilities in other countries in Latin America, such as Mexico, Puerto Rico and Cuba.

Within this framework, IUPAP and IUCr are partnering with ICSU (renamed International Science Council, ISC, in July 2018) through the LAAAMP project, entitled in full “Utilisation of Light Source and Crystallographic Sciences to Facilitate the Enhancement of Knowledge and Improve the Economic and Social Conditions in Targeted Regions of the World”, to enhance AdLSs and crystallographic sciences in Africa, Mexico, the Caribbean, Southeast Asia and Middle East. In this talk, the project and its activities will be presented in the context of the outreach activities of the IUCr.

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