MS48-O2 History as a tool for a crystallographic storyteller

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One of the crucial problems in communicating science to non-scientists is making the scientific contents interesting. The general way of achieving this goal is to arrange the science which is to be communicated into an interesting and engaging narrative – in other words to tell a story. The storyline has a double function: it captures the attention of the readers / listeners, and at the same time it provides a framework in which the scientific content is arranged. The audience thus learns about science almost without realising that they are learning, and, in the ideal case, will at the end desire to learn even more. History of science provides a natural source of narratives which can be used in science communication. Not only that a well presented historic account of a given subject can by itself be an engaging *story*, but also the knowledge of the earlier stages of the development of a scientific area, often enables the presenter to introduce the given area to their audience in a simpler, more understandable, and sometimes more amusing way. Many basic notions of modern crystallography can be introduced through historic accounts. These include not only the areas which have been (fully) developed in the past centuries (e.g. crystal morphology and symmetry), but also the 'more modern' notions of crystal structure have their origins in models and ideas which were present considerably earlier than the 20th century. The purpose of this talk is to present some of the ways in which the history of crystallography can be an inspiration for presentations an activities aimed at communication of crystallography to wide audiences, as well as to share some experiences accumulated over the past several years of communicating and popularising crystallography in Croatia.

Keywords: history of crystallography, science communication

MS48-O3 Outreach of IYCr: an example of an hybrid approach in crystallography teaching

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Traditionally, crystallography was defined as a mathematical description of crystalline matter that exhibits three-dimensional periodicity. Nowadays, with the arrival of new materials and advances of instrumentation, crystallography is taken under the umbrella of material science. Synchrotrons are widely accessible, computing power is cheap, laboratory diffractometers are automated, and the conventional crystallography definition is no longer valid: samples are "structurally challenged", have two-dimensional periodicity, or even non-existent (structure prediction). Without any doubt, this multitude of samples, techniques and methods broadened the scope and outreach of crystallography. However, this outreach appears to be restrained. While in the modern world these automated processes cause basic crystallographic knowledge to be neglected, developing and less-privileged countries are lagging even more behind, having only limited access to both modern equipment and traditional crystallographic education. In the scope of the International Year of Crystallography (IYCr), joint forces of academia, equipment manufactures and large-scale facilities proposed an initiative to overcome these differences. By organizing a series of admission-free Schools and Workshops worldwide, the initiative aimed to adjust crystallography teaching to the needs of a specific region (developed, developing and less-privileged) or a particular interest group. By taking these factors into account, these programs allowed students and researchers to increase their knowledge in crystallography, and gain insights into specific aspects of material science. Outcomes of this hybrid approach in crystallography teaching will be illustrated on the example of OpenFactory, a crystallography school organized by IUCr, IYCr, STOE, DECTRIS and Xenocs. This international school gathered participants from various fields of research. After being introduced to basics of crystallography, diffraction and scattering, this theoretical knowledge was put into practice at STOE's and Xenocs' application laboratories. Such a hands-on experience with hardware and software enabled a solid foundation for further research of the participants. International environment, variety of research fields, scientific backgrounds and interests served as an overview of crystallographic activities worldwide, and opened up possibilities for future projects and collaborations.