

GIG3 – Education in

Crystallography Reported

Period: 2019-2020

Report Date: January 2021

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1. Introduction.

During 2020, scientific research and education programs have been hindered by the health emergency caused by COVID-19. Several events, such as schools and conferences, have been canceled, postponed or carried out online. As a consequence, also the activities of GIG3 have been reduced, but its support mission in spreading education in crystallography has remained unchanged.

2. GIG web site:

The new GIG3 website can be found at <https://gig03eca.wixsite.com/gig03eca>. It contains a “News” section where it is possible to find information on crystallographic educational events as well as advertise different initiatives. The “Knowledge Center and Resources” section comprises several links to papers, book chapters, websites for learning crystallography and state-of-the-art software. Finally, “National Resources” refers to an interactive map collecting information on national educational resources divided by countries (implementation in progress).

3. Number of ECA individual members registered with the GIG according to

(<https://ecanews.org/groups/gig-03-education-in-crystallography/>)

GIG3 Education in Crystallography, 52 members

4. Existence of a GIG mailing list: Yes

Address of the mailing list: gig3eca@unipr.it

Number of members in the SIG/GIG mailing list: 52

5. Approximate total number of researchers involved in the GIG:

50 (based on the members of the GIG and on the mailing list).

6. List of MS organized by the SIG/GIG at the present ECM:

Not applicable

7. Prizes sponsored/coordinated:

None

8. Past Activities other than Microsymposia at ECM

Interaction with the Local Organizing Committee of the ECS6 from Hungary, for the organization of the school, which has been postponed from 2020 to 2021 (online).

9. Future/Programmed Activities

This section relates the content of the GIG3 meeting, which was held in Vienna during ECM32 (August 2019), plus some suggestions proposed by Spanish and Italian colleagues during the annual meeting of the Italian Crystallographic Association (Naples, September 2019).

General proposals

- 1) Scanning of valuable paper material to be successively made available online.
- 2) Implementation of different communication activities using social media (twitter/facebook/instagram etc.).
- 3) Production of short (5-10 minutes) educational videos
- 4) Monthly newsletter on major crystallographic events.

Proposals for future ECMs

Key Notes

We suggest including in the future ECMs **a special KN with a general perspective**, that should focus on a currently relevant topic. However, the invited speaker should NOT describe only his/her own, specialized/recent results, BUT should have **a didactic approach to a general research area with a crystallographic point of view in mind** (some kind of thematic review with a clear crystallographic approach). The last minutes of the lecture could be dedicated to current results to remark the real value of the research area taken into account.

This talk could be an attractive way to learn the state of the art of a relevant topic from the direct voice of an experienced colleague, possibly possessing excellent communication capabilities. This approach, at the cross-section of many different areas, could be well supported by other SIGs and/or GIGs.

Microsymposia

Possible new topics for microsymposia could be: i) the description of new experiences in the teaching of crystallography: new course programs, new digital applications (app's or computer programs), the use of recorded videos, learning crystallography by projects, flipped classroom in crystallography, etc. ii) the use of specific physical techniques different from X-ray diffraction to understand typical properties of new compounds. The proper teaching of crystallography should be integrated by short but precise descriptions of complementary techniques and by clear current examples of the synergy crystallography creates with other experimental approaches.

We will be happy to support any proposal from any other GIG (may be GIG2) in the direction of the ECM32 microsymposium entitled **“Teaching New Dogs Old Tricks”**. This was a real success in ECM32 with more than 250 participants. We could maintain the same title to make clear the potential audience of the intended MS purpose and the type of selected speakers, or we could change it slightly to reinforce the MS contents: “Crystallographic concepts we should know” or “What is inside the black box”. We are convinced that some basic concepts in Crystallography are not well understood/explained even by experienced colleagues.

We also support a very transversal topic that was present in the last two or three previous ECM editions, that is the general interest meeting on **“Women in Crystallography”**. We understand this MS to be addressed to explore in the history of Crystallography to learn about relevant contributions to the progress of our science made by women scientist that for some reasons have not sufficiently been transferred to the knowledge of our community.

Poster session

We suggest future ECMs organizers to have a submission “space” on **“Outreach for Crystallographic Education”** within the abstract submission program, without having a specific MS scheduled for this topic but with a prize for the most original initiative. Our GIG3 representative could be responsible for the monitoring of this type of abstracts to control a reasonable quality.

Outreach complementary events

Our GIG3, and many ECM participants, are very keen on **‘Outreach in crystallography’** experiences and we suggest the future ECM organizers to think about some complementary outreach activities to reinforce the impact of the ECM in the local society. We suggest organizing:

- 1) One or two open sessions with outreach lectures on crystallographic items. They could be in English or in the language of the country hosting the conference.
- 2) Public excursion with crystallography teaching
- 3) Some kind of slide-show with beautiful pictures of crystals from different crystal growth competitions (from different countries) to be inserted between scientific sessions or during breaks. They could include an indication of the country of provenience, the crystallized compound and the name of the competition.

10. Other matters. (50 words max.)

GIG3 endorsed the applications of the International School on Advanced Porous Materials “MOFsSchool2021” to be held at the end of June 2021 in Como (Italy) and of the ISCoC “Molecular Crystal engineering” that has been switched to the online mode (31st May – 4th June 2021).

11. Brief annual activity report (100 words max.)

GIG3 is currently maintaining and developing the website and continues to offer support to schools and workshops, many of which have been postponed due to COVID-19. Other actions, such as the co-organization of microsymbiosia for ECM33 have been preliminarily discussed but are currently in stand-by. The GIG3 representative at ECM33 will be Fernando Lahoz.

12. List SIG officers, name and e-mail, and specify their main function in the SIG:

GIG3 Officers

Chair: A. Guerri (annalisa.guerri@unifi.it)

Vice-Chair: C. Massera (chiara.massera@unipr.it)

Secretary: K. F. Dziubek (dziubek@lens.unifi.it)

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