

SIG1: Macromolecular Crystallography

Reported Period: 2023-2024

Report Date: 20 August 2024

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1. Introduction. (50 words max.)

The principal objectives of the Macromolecular Crystallography SIG are to support advances in macromolecular crystallographic research by both theoretical and experimental methods and their applications, and to represent and bring together researchers interested in these areas.

2. SIG web site:

SIG1 url: <https://ecanews.org/groups/sig-01/>.

3. Number of ECA individual members registered with the SIG according to **(<http://www.xray.cz/eca/im-payment.htm>)**

SIG1	Macromolecular Crystallography	315 (2021)
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According to ecanews.org

SIG-01	Macromolecular Crystallography	58
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4. Existence of a SIG mailing list : Yes

Address of the mailing list: <https://groups.google.com/forum/#!forum/sig1eca>

Number of members in the SIG mailing list : 30

5. Approximate total number of researchers involved in the SIG (please indicate the basis for the estimate)

SIG1 currently has 315 registered members (from <http://www.xray.cz/eca/eca-sig.asp?id=SIG1>), while meetings are normally attended by ~30-50 individuals. Several dozen researchers are involved in SIG1 activities, especially in the organization of courses and workshops.

6. List of MS organized by the SIG at the last ECM (ECM33)

MS1 - MX/Cryo-EM software development

MS2 - Infection and Disease/hot structures

MS3 - Crystallization and biophysical characterization

MS4 - Structures in Cancer Biology

MS5 - Nucleic acids and their interaction

MS6 - Structural Enzymology

MS7 - Membrane Proteins

MS8 - Serial Crystallography

MS9 - Integrated structural biology

MS10 - Protein carbohydrate interactions

MS11 - Opportunities from combining structural biology and fold prediction

7. Past Activities other than Microsymposia at ECM

2023 was an iUCR year so no major ECM meeting took place. The last ECM meeting took place in Versailles in August 2022 and included a range of microsymposia originally proposed by SIG1 (above). Several satellite workshops in biomolecular crystallography also took place at the last meeting. ECA sponsored and supported activities included the 25th Heart of Europe Bio-Crystallography Meeting (HEC-25), Salem, Mecklenburg-Vorpommern, Germany from September 21-23, 2023 and the Hot topics in contemporary crystallography 2024 (HTCC6), organized by the Croatian Association of Crystallographers held in Dubrovnik, Croatia, from April 7-12, 2024.

8. Future/Programmed Activities.

SIG1 has been actively involved in the planning of the microsymposia for the ECM34 meeting in Padova, Italy (2024). Ronan Keegan is currently the main contact from SIG1 for this activity. A list of microsymposia were proposed that balance the different interests of SIG1 regarding science as well as methods and instrument development. An initial set of microsymposia have also been suggested for ECM35 to be held in Poznan, Poland in 2025. Ronan Keegan is the main contact from SIG1 for this meeting and the proposals will be discussed at the ECM34 meeting in Padova.

As for past activities, a large panel of workshops and courses are foreseen for the coming year. A specificity of SIG1 is the fact that sample preparation is an important part of structural biology and the theme of many courses goes well beyond crystallography. Many of the activities will be organised by INSTRUCT, <http://www.structuralbiology.eu/>, the network for structural biology in Europe as well as iNEXT (<http://www.inext-eu.org/>).

9. Other matters. The next annual meeting of SIG1 will take place at the ECM34 meeting in Padova. It is anticipated that there will be discussion on the microsymposia, chairs and keynote speakers for ECM35 (2025) as well as the election of new SIG officers.

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

The main activity of SIG1 involves the organization of the microsymposia and keynote speakers for the individual European crystallographic meetings. The aim is to offer a wide variety of topics to structural biologists with a view to increase the attendance of our current and potential members at the annual meetings. In addition, individual members participate in organizing workshops and conferences of interest to European structural biologists.

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

Chair: Marjolein Thunnissen, Lund, Sweden, Marjolein.Thunnissen@maxiv.lu.se

Vice-Chair: Jan Dohnalek, Prague, Czech Republic, dohnalek007@gmail.com

Secretary: Ronan Keegan, Oxford, UK, ronan.keegan@stfc.ac.uk