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Speaking to everyone about Crystallography – The Bragg Your Pattern Project

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Speaking to everyone about Crystallography – The Bragg Your Pattern Project

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Abstract

Many programs for science communication are targeted towards secondary-school ages (11 +) and for good reason, as this is when students make choices on subjects to study further. It is vital that these students are supported in their continuing science education. But are we missing out on inspiring them in the first place? Can we help students to see the bigger picture of science, beyond grades and textbooks? What if we run programs that target younger students, as well as their families? For younger students, it is vital to have strong visual and hands-on components to science communication activities. Crystallography lends itself extremely well to visual science communication – we have a great history of leveraging that. But do we have enough hands-activities that are suitable for under 11s, can be undertaken cheaply, and are linked to big crystallographic science ideas?

The Australian and New Zealand crystallographic community leveraged hosting the IUCr2023 meeting to launch a program of events and initiatives to communicate crystallography to those under 11 years old and their families. We undertook a range of events and activities, from pattern competitions, to a crystallographic science festival, [1] to even attempting to break a world record. For this we used existing ideas on 3D printing structures [2] (but upsized it), modified established hands-on activities [3] [4] [5], and developed more. In this contribution I'll review what we carried out, what did (and didn't) work and how we are planning to continue the momentum into the future which could be applied at IUCr2026.

[1] Batten, Stuart R., et al. 'Crystal-a-con at IUCr2023', IUCr Newsletter 31, 4 (2023)

https://www.iucr.org/news/newsletter/etc/articles?issue=157601&result_138339_result_page=15 [Accessed 26th March 2024]

[2] Wood, Peter A., et al. 'The next dimension of structural science communication: simple 3D printing directly from a crystal structure.' CrystEngComm 19.4 (2017): 690-698.

[3] Murray, Claire, et al. "Crystals in the community and the classroom." Journal of Applied Crystallography 57.1 (2024).

[4] RCSB PDB, 'PCB 101, paper models' <https://pdb101.rcsb.org/learn/paper-models> [Accessed 26th March 2024]

[5] CCDC 'Crystal adventures' <https://www.ccdc.cam.ac.uk/community/education-and-outreach/outreach/science-festivals/> [Accessed 26th March 2024]

