WORKSHOP REPORT

MathsJam Conference 2015

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The MathsJam weekend is an annual recreational maths conference convened by Colin Wright and held in Staffordshire in the U.K. since November 2010. This is related to the monthly MathsJam meetings, which take place in pubs in over thirty locations around the world and, since starting in 2008 in London, has provided an opportunity for "like-minded self-confessed maths enthusiasts to share puzzles, games, problems or anything else they thought was cool or interesting" (Rowlett et al., 2012). The conference offers a more structured format with the same ethos.

The 2015 conference started with lunch on Saturday 7 November 2015 and ended at lunch on Sunday 8 November 2015. The format is based around five-minute talks, with more than fifty presented in a single strand of six sessions over the two days. This format offers not enough time to give a lot of detail, but just enough to show something interesting or ask a question to provoke further discussion. After a block of around 7 talks there is a break, during which speakers make themselves available for further discussion with anyone who wishes to learn more. As a speaker, I can confirm that discussion carries on well beyond this as well. This format avoids audience members feeling they are sitting through long talks that don't interest them or are missing something in a parallel strand, while promoting an ethos of 'sharing interesting ideas'.

The conference is specifically not an 'education' meeting. Indeed, many of the attendees have no role in education. Nevertheless, there is potentially great value in attending the series for those involved in education, and many attendees are school teachers, university lecturers and in related roles. The format means the conference was dense with a variety of potentially useful ideas.

In 2015, there were talks on recreational maths staples (for example, Matt Parker discussed the construction of magic squares) and, as you might expect from a recreational maths meeting, talks on related topics such as number theory (Matthew Scroggs, discussing forming a 'crossnumber' puzzle for Chalkdust Magazine, told us that every positive integer greater than 77 is a finite sum of distinct integers greater than 1 such than the sum of their reciprocals equals 1), geometry (John Bibby showed geometric patterns in African textiles) and probability (Martin Whitworth spoke about Penney's game, which involves two players tossing a fair coin until one wins when their particular sequence of heads and tails occurs).

Attendees are encouraged to present talks on topics that interest them, leading to some variety. There were talks about history, including Pedro J. Freitas showing the geometry of Portuguese artist José de Almada Negreiros (1893-1970) and Nicholas Jackson giving a potted biography of Émilie du Châtelet (1706-1749).

Although education was not the focus, there were some talks with an educational slant. Ken McKelvie discussed a variant on the 'Hannah's sweets' problem (Bellos, 2015), and Rob Eastaway covered an interesting solution to the 'Crocodile' question (Kennedy, 2015), both having been reported as 'difficult' exam questions this year in England and Scotland, respectively. Talks about how to explain mathematical concepts included Colin Wright's attempt to find an intuitive explanation why two sine waves sum to give a third sine wave, and Rob Eastaway's attempt to explain the construction of a deck of cards for the game Dobble (Spot It! in the USA) to students (actually, his children) who don't know about projective planes.

There were talks on mathematical modelling and other applied topics, including some by engineers and computer scientists. For example, Neal Harwood spoke about traffic modelling under the title 'Motorway Traffic: Shockwaves, Flow Breakdown and the problem of Hysteresis', Ben Sparks described how conic sections are used to track aeroplanes by triangulating radio signals, and Dan Hagon discussed the sophisticated geometry that must be understood in order to determine whether a mesh can be 3D-printed or not.

Outside of the formal sessions, there was a baking competition (in which attendees compete for prizes 'best cake', 'best presentation' and 'best maths') and a competition competition (in which attendees enter competitions they have invented for prizes including 'best competition', 'most (genuine) entries' and 'best attempt at circumvention of the rules while still strictly sticking to the rules'). An informal, semi-structured evening session included groups learning board games, card magic and mathematical knitting.

For me, professionally, the most valuable aspect from attending this conference over six years has been in collecting and sharing puzzles and games that might be useful for our Maths Arcade activity (see Bradshaw and Rowlett, 2012). For example, this year I gave a talk 'Nim-like games' covering Solomon's Stones (a game used at our Maths Arcade) and Wythoff's Game. This meant that a number of other attendees told me about interesting Nim variants, which might be useful in future Maths Arcade activities or when running this topic as a final year undergraduate project. I also discovered interesting new (to me) games; for example, this year Kathryn Taylor gave a talk about Hnefatafl, an apparently unbalanced ancient game of pure strategy that would be perfect for the Maths Arcade. I'm sure many other attendees who teach maths at university have found value specifically relevant to the areas they teach.

Otherwise, it is enjoyable to see people enthusing about mathematics, and interesting to see different ways people in a variety of occupations find to apply and take interest in maths – in formal work settings and recreationally. This can be useful when describing to students areas of employment in which they may use maths. It's also a lot of fun. I recommend the conference series wholeheartedly.

References

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