The Petra Šparl Award 2020

The Petra Šparl Award was established in 2017 to recognise in each even-numbered year the best paper published in the previous five years by a young woman mathematician in one of the two journals *Ars Mathematica Contemporanea* (AMC) and *The Art of Discrete and Applied Mathematics* (ADAM). It was named after Dr Petra Šparl, a talented woman mathematician who died mid-career in 2016 after a battle with cancer. The first award was made in 2018 to Dr Monika Pilśniak (AGH University, Poland) for a paper she published in AMC on the distinguishing index of graphs.

Nominations for the 2020 award were invited in 2019, and all cases were considered by a committee (consisting of the three of us, listed below) appointed by the Editors-in-Chief of AMC and ADAM. As judges we were impressed by the large number of papers in these journals over the five years 2015–2019 having a woman author or co-author, with many of these being women in the early stages of their career. With helpful commentaries from co-authors and/or nominators, we drew up a long list of candidates for the 2020 award, sought reports from referees on those, and also considered the papers themselves, before making a decision.

In fact it seemed very appropriate to us to celebrate these awards in a year in which Slovenia was to be hosting the European Congress of Mathematicians, by recommending two awards. Sadly the ECM is being postponed to 2021, but we are proceeding with an announcement of the 2020 awards.

The two winners of the Petra Šparl Award for 2020 are as follows:

- Dr **Simona Bonvicini** (of the Università di Modena e Reggio Emilia, Italy), for her contributions to the paper 'Octahedral, dicyclic and special linear solutions of some Hamilton-Waterloo problems', co-authored with Marco Buratti and published in *Ars Mathematica Contemporanea* **14** (2018), 1–14. This paper provides a solution for each of the nine Hamilton-Waterloo problems with cycles of length three and four, left open by Danziger, Quattrocchi and Stevens in their paper in 2009. Its value lies not only in dealing with the missing cases, but also in the elegant approach taken, and the novel techniques used. Solutions with high degree of symmetry are constructed by taking appropriate groups of automorphisms with sharply vertex-transitive action (which was not an easy task, as only one group for each case could be used). Simona's contribution was described by her co-author Marco Buratti as significant at all stages, showing deep understanding and great skills.

- Dr **Klavdija Kutnar** (of the University of Primorska, Slovenia), for her contributions to the paper on 'Odd automorphisms in vertex-transitive graphs', co-authored with Ademir Hujdurović and Dragan Marušič, and published in *Ars Mathematica Contemporanea* **10** (2016), 427–437. This paper addresses the question of which vertex-transitive graphs admit automorphisms that act as an odd permutation of the vertices. It reports on work that was initiated by Klavdija Kutnar, and is the first paper to consider such a question. The paper provides background motivation, makes some very interesting observations, and poses open questions for further study. Klavdija's two co-authors attest that her contributions to the paper were of utmost importance, and that she provided key ideas in solving various problems. Also the number of

citations the paper has received on MathSciNet shows that it has opened up a new line of study, attracting several other researchers in the field.

We heartily congratulate the two awardees.

Also we encourage nominations for the next Petra Šparl Award in 2022, as well as submissions of high quality new papers that will be worthy of consideration for future awards.

Marston Conder, Asia Ivić Weiss and Aleksander Malnič
Members of the *2020 Petra Šparl Award Committee*