

Report of the C3 Commission (Statistical Physics) to the IUPAP submitted on 30 August 2020

We have mentioned in our last report (1 June 2019) that the C3 Commission for Statistical Physics is responsible for running the IUPAP StatPhys Conference, which has been held 27 times so far; the last two such meetings were StatPhys 26, held in Lyon, France in 2016, and StatPhys 27, held from 8-12 July 2019 in Buenos Aires, Argentina [<https://statphys27.df.uba.ar/>].

During such StatPhys conferences, the C3 Commission meets, the Boltzmann Medal is awarded to outstanding Statistical Physicists (chosen by votes of the members of the C3 Commission, the former Chair of the C3 Commission, the Chair of the Organizing Committee for the STATPHYS Conference, and previous Boltzmann Medalists). In addition, in the last five meetings, Young Scientist Prizes have been awarded to highly promising young Statistical Physicists.

In the Buenos Aires StatPhys 27 Meeting, Professor Dr. Herbert Spohn, Technical University Munich, Germany was awarded the Boltzmann Medal 2019, for his wide-ranging and highly influential work in non-equilibrium statistical physics. [<https://statphys27.df.uba.ar/boltzmann.html>]

Furthermore, the Young Scientist Prizes in Statistical Physics were awarded to:

Dr. Manlio De Domenico, Fondazione Bruno Kessler, Italy (for his very important contributions to the modeling of complex systems based on statistical physics and nonlinear dynamics, in particular, the development of the physics of multilayer networks and a quantum-inspired statistical mechanics of networks);

Dr. Lucile Savary, Ecole Normale Supérieure de Lyon, France (for her pioneering contributions to our understanding of complex quantum states of matter with particular reference to quantum spin liquids);

Dr. Alexandre Solon, Sorbonne Université, LPTMC, CNRS, France (for his outstanding theoretical contributions to the development of non-equilibrium statistical physics and the field of active matter).

[<https://statphys27.df.uba.ar/scientist.html>]

The StatPhys 27 meeting in Buenos Aires was a great success. On behalf of all the members of the C3 Commission we would like to place on record our appreciation for the untiring efforts of Professor Silvina Ponce Dawson and her colleagues on the Local and National Organising Committees, Professor Gustavo Lozano, Professor Pablo Balenzuela, Professor Pablo Mininni, and Professor Ana Maria Llois. They put together a very good programme of lectures. The list of plenary and invited speakers is available at [<https://statphys27.df.uba.ar/speakers.html>].

In addition a large number of Satellite Meetings were held just before or soon after StatPhys27. A list of these Satellite Meetings is available at [<https://statphys27.df.uba.ar/satellites.html>].

During StatPhys 27, we held the meeting of the C3 Commission. We had made special efforts to encourage statistical physicists in different countries to bid to host the next StatPhys Conference. During the meeting of the C3 Commission, the members considered the bid from

Professor Deguchi and his colleagues to host StatPhys 28 in Yokohama, Japan in 2022. This bid was accepted unanimously.

Other important issues that we discussed were the following: (a) Nominations for new members of the C3 Commission and the new Chair of the C3 Commission; these will be confirmed at the time of the General Assembly of the IUPAP. (b) A proposal for a joint meeting with the C6 Commission on Biological Physics; the consensus was that it would be best to have two meetings, close together, but not one joint meeting.

During this year, we have been considering conference applications in Statistical Physics. We have also been having discussions with Professor Deguchi about how best to overcome any difficulties, which might arise because of the COVID-19 pandemic, in the organization of StatPhys28 in Yokohama in 2022.

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Maxi San Miguel, Vice Chair, C3 Commission (Statistical Physics) of the IUPAP

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