

## Hard Probes 2020

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**R. J. Fries,<sup>a</sup> F. Geurts,<sup>b</sup> C. Markert<sup>c</sup> and C. Ratti<sup>d</sup>**

<sup>a</sup>*Texas A&M University*

<sup>b</sup>*Rice University*

<sup>c</sup>*University of Texas at Austin*

<sup>d</sup>*University of Houston*

*E-mail:* [hp2020-cochairs@googlegroups.com](mailto:hp2020-cochairs@googlegroups.com)

*10th International Conference on Hard and Electromagnetic Probes of High Energy Nuclear Collisions  
June 1 - 6, 2020  
Austin, Texas*

## Preface

The International Conference on Hard and Electromagnetic Probes of High Energy Nuclear Collisions (*Hard Probes*) focuses on the experimental and theoretical developments of perturbative probes of hot and dense QCD matter as studied in high-energy nucleus-nucleus, proton-nucleus and proton-proton collisions. Specifically, it covers topics that include (i) Nuclear PDFs and hard processes in nuclei, (ii) Early time dynamics, (iii) Jets and their modification in QCD matter, (iv) High momentum hadrons and correlations, (v) Heavy quarks and quarkonia, (vi) EM and electroweak probes, (vii) Future experimental facilities, and (viii) New theoretical developments.

The 10<sup>th</sup> Hard Probes Conference was scheduled to be held in Austin, Texas, in June 2020. However, as the starting date of June 1 approached it became obvious that an in-person conference would not be feasible at a time when the host country, or for that matter the world, was grappling with an ever worsening pandemic. Hard Probes 2020 would become the first major conference in the field of high-energy nuclear collisions that on very short notice switched from the conventional in-person format to a completely virtual arrangement. Despite this major challenge a record number of contributions and attendees allowed for the dissemination and discussion of many new results and ideas.

The Hard Probes 2020 conference was held June 1 - 5, 2020. A Student Day preceded the main conference program. Eight introductory lectures specifically addressed the main topics of the conference. The format that was adapted for the main program of Hard Probes 2020 after much deliberation scheduled plenary morning sessions for the first four days which were followed by four tracks of parallel sessions. To facilitate attendance across many time zones an effort was made to keep presentations to time slots that would not last too long in the "hosting" city, i.e. no later than 2 pm CDT. A poster session was held early in the week. Poster presenters were encouraged to upload teaser videos prior to the session and had their own virtual room for presentation and discussion. On the last day, plenary presentations focused on future facilities while flash talks and summary presentations concluded the scientific program. A total of 29 plenary presentations and 8 flash talks were complemented with 152 parallel contributions. Video recordings for all sessions have been archived for future reference. We congratulate all the flash talk speakers, and for that matter all young scientists who contributed despite all the challenges. We refer to the conference web page <sup>1</sup> for more details as well as any and all of the presentation materials.

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<sup>1</sup><https://indico.cern.ch/event/751767/>

### Conference Statistics

One of the first of its kind to go fully online, Hard Probes 2020 set a few records in registration and attendance or the Hard Probes series, in part because conferences fees were waived. Participation during the Student Day peaked at 234 participants and more than 720 people were registered for the main conference. The organizers of this conference have made a consistent and persistent effort to improve gender balance in any way possible and have aimed for a reasonable geographical representation. In this section we report the relevant numbers. We hope that this will provide a benchmark for future reference, and that the community will see similar public records from other conferences and workshops in our field.

**Table 1:** Gender balance in attendance and contributions to Hard Probes 2020

	male	female
chairs	50%	50%
IAC	59%	41%
lecturers	87%	13%
plenary chairs	64%	36%
plenary speakers	60%	40%
registrations	73%	26%
contributed talks	78%	22%

### Acknowledgements

The conference co-chairs gratefully acknowledge the encouragement and strong support that they have received from the spokespersons of the four experiments at LHC during the transition to a virtual conference. They also would like to thank Julia Cachet for her excellent secretarial support. We also like to thank the CERN IT department, and in particular Thomas Baron, for his invaluable technical support. A special thank you from the co-chairs goes to all members of the Local Organizing Committee and the International Advisory Committee, the lecturers, and in particular to all session managers who have made this conference possible.



International Advisory Committee

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Conference Chairs

Rainer Fries (Texas A&M)	Christina Markert (UT Austin)
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