

November 2019 DPF Newsletter

Dear DPF members,

Please find below the monthly DPF newsletter for November 2019. This newsletter will be archived on the DPF website.

If you would like an announcement included in the December newsletter, to be sent out around December 15th, please contact the DPF Secretary/Treasurer. Please keep requests to 300 words and submit them by the **10th of the month** for consideration.

Mirjam Cvetič, Secretary/Treasurer, cvetic@physics.upenn.edu

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Snowmass Planning

The Division of Particles and Fields of the American Physical Society announces the next HEP Community Planning Exercise (a.k.a. Snowmass)

The Snowmass Community Planning Process is organized by the Division of Particles and Fields of the APS. In order to coordinate efforts across divisions, a steering committee consisting of the DPF executive committee with representatives from the executive committees of DAP, DPB, DNP, and DGRAV will meet regularly. Snowmass is an opportunity for the entire HEP community to come together to identify and document a vision for the future of particle physics in the U.S. and its international partners. Workshops will be organized over the next couple years, culminating in a 2021 summer session that pulls all the work together. Snowmass provides input to the HEPAP prioritization panel (P5), which in turn provides advice under a set of funding scenarios to the agencies on future projects and scientific programs.

Dates and Site Selection: The dates for the summer study are **July 11 - 20, 2021** and we are now soliciting site proposals. Send site proposals to cushman@umn.edu by November 15, 2019 and they will be evaluated by the entire DPF executive committee. Plan for ~ 1000 attendees. Include the following: Names of your local organizing committee, cost and availability of lodging (mix of low- and high-end hotels, dorms or retreat center), public transportation, rough estimate of registration cost prior to any supplement provided by DOE or a private foundation, although your plans for defraying the cost can be included. Include parallel session rooms, auditorium (seats ~ 1000), coffee breaks, AV, and administrative help. Provide a rough estimate of banquet or reception costs separately. Feel free to include any special advantages of your venue. For your reference, the 2013 website is still (mostly) available at <http://www.hep.umn.edu/css2013/>

Convener Nomination: We are soliciting nominations of conveners for the working groups that will become the main organizing bodies for workshops, white papers, and the final summary paper. Our intention is to pair junior and senior career scientists, as well as appropriate representation of theory vs experiment. The details of this process, which is designed to create the broadest and best representative sampling of our field, is found at <https://snowmass-wiki.fnal.gov>. There you will find a job description for conveners, as well as how to send in your nomination. Nominations must be received by **November 15, 2019**. The list of topics for which you may make nominations is in a separate file.

Input to the Process: Your contributions and participation will naturally occur as part of one or more working groups directed by the conveners, as well as by nominating conveners and subconveners. As we put together the process, you are also welcome to provide input and suggestions on the Slack channel and APS Engage website (these are coming soon!). You will be able to use these platforms to comment throughout the entire process from subtopics to workshop planning schedules. We are ahead of schedule when compared to the process in 2013. We aim for everyone's voice to be heard.

Sincerely, Priscilla Cushman (DPF Chair)
Young-Kee Kim (DPF Chair-elect)
Tao Han (DPF Vice-chair)

2020 DPF Election Announcement

21 October – 1 December, 2019

To: DPF Members

The election for DPF Vice-Chair, Executive Committee Member-at-Large, and Early Career Member has begun. You should have received an email message that contains instructions for voting and has a personalized link that you should follow to find your ballot. The message will be sent from the domain "directvote.net". When you receive the election notice from "directvote.net", please click on the link provided or cut and paste the link into your browser to log onto the election website. The election site will be available from October 21 through December 1, 2019. Voting in the DPF election is an important activity! Your participation in the DPF election is very much appreciated. Thank you very much for your support.

BRN Study on HEP Detector Research and Development (R&D)

Dear Colleagues,

At the DPF meeting in Boston in August, 2019 the DOE Office of High Energy Physics (HEP) announced a Basic Research Needs (BRN) Study on HEP Detector Research and Development (R&D).

The BRN website is: [DOE-BRN-HEP-Detector-R-and-D](#)

The Detector R&D BRN Study will:

- Survey the present state of the HEP technology landscape.
- Identify key capabilities and associated performance requirements to enable HEP science drivers.
- Identify technologies to provide or enhance such capabilities.
- Articulate long-term Priority Research Directions to push well beyond the current state of the art, potentially leading to transformative technological advances with broad-ranging applicability; flesh out the required R&D efforts with deliverables with notional timelines and key technical milestones along the way; and elucidate the technical infrastructure required to support these efforts.
- Formulate a small set of instrumentation Key Challenges that could, if addressed successfully, result in game-changing experimental capabilities.

The BRN Study structure consists of five “physics working groups” based on the five P5 science drivers: the Higgs as a tool for discovery, the physics of neutrino mass, the new physics of dark matter, cosmic acceleration: inflation and dark energy, and exploring the unknown: new particles, new interactions and physical principles; and seven “technology working groups”: Quantum Sensors, Solid State (including vertexing and tracking), Calorimetry, Photodetectors, Noble Liquids, TDAQ (including Machine Learning), and Readout & ASICs. There is also a cross-cutting group. Each working group is led by two conveners. In addition to the conveners, the physics groups have two members and the technology groups have four members.

A hallmark of the BRN Study will be very close interaction between the physics and technology groups and with the HEP community. The initial community input to the BRN Study is the DPF Coordinating Panel on Advanced Detectors 2018 Report “New Technologies for Discovery” [CPAD-Report-2019](#) . Following on from this, most BRN working groups have identified a number of expert associate members and all working groups are engaging in outreach to the relevant communities.

The Conveners of the BRN Study are:

- The Higgs as a tool for discovery: Jim Hirschauer (FNAL) Gabriella Sciolla (Brandeis)
- The physics of neutrino mass: Ornella Palamara (FNAL) Kate Scholberg (Duke)
- The new physics of dark matter: Jodi Cooley (SMU) Dan McKinsey (Berkeley)
- Cosmic Acceleration: inflation and dark energy: Clarence Chang (ANL) Brenna Flaughner (FNAL)
- Exploring the unknown: new particles, new interactions and physical principles: Sarah Demers (Yale) Monica Pepe Altarelli (CERN)
- Quantum Sensors: Andy Gercai (Northwestern) Kent Irwin (Stanford)
- Noble Liquids: Roxanne Guenette (Harvard) Jocelyn Monroe (RHUL)
- Calorimetry: Francesco Lanni (BNL) Roger Rusack (Minnesota)
- Solid State (tracking and vertexing): Marina Artuso (Syracuse) Carl Haber (LBNL)
- Photodetectors: Lindley Winslow (MIT) Peter Krizan (Jožef Stefan Institute)
- TDAQ: Darin Acosta (Florida) Tulika Bose (Wisconsin)
- Readout and ASICs: Gabriella Carini (BNL) Mitch Newcomer (Penn)
- Cross Cut: Marcel Demarteau (ORNL) Abe Seiden (UCSC)

The Chairs of the BRN Study are:

Bonnie Fleming (Yale), Ian Shipsey (Oxford)

The DOE BRN Study liaisons are:

Glen Crawford (DOE), Helmut Marsiske (DOE)

The end product of the BRN Study will be a report due at the end of February 2020. The report will take its final shape at a BRN Workshop that will be held December 11-14, 2019 in the DC area. This workshop will be attended by all BRN Study members plus a number of observers: DOE Program Managers from HEP and related programs, and from NSF. The plenary talks on the first day will be streamed to the community.

In September we began regular telecons to conduct the ground work for a productive and conclusive workshop in December which will lead to a report that is a crisp and compelling articulation of the essential enabling power of instrumentation to deliver the US High Energy Physics program in a global context over the next twenty years.

The BRN website contains the email addresses of the conveners and co-chairs and we encourage you to contact any convener or the co-chairs if you have comments, ideas, suggestions or questions. The website also contains portals to communicate with the BRN Study.

In addition, many BRN Study members will attend the [CPAD Workshop](#) in Madison, Wisconsin December 8-10, 2019 [CPAD-Madison-2019](#) where there will be townhalls and other fora for community input and dialog with the BRN process.

The BRN Study is looking forward to hearing from you.

Bonnie Fleming & Ian Shipsey

BRN Study Co-Chairs

Glen Crawford & Helmut Marsiske

DOE Liaisons

Coordinating Panel for Advanced Detectors (CPAD)

8-10 December, 2019

Registration Deadline: 15 November, 2019

The Coordinating Panel for Advanced Detectors (CPAD) of the APS Division of Particles and Fields will hold its fifth annual instrumentation workshop in Madison, WI from **December 8-10, 2019**. The workshop will be organized by the University of Wisconsin - Madison. The meeting website is <https://wp.physics.wisc.edu/cpad2019/>

The goal of the workshop is to survey the state of detector R&D for particle physics at the energy, intensity, and cosmic frontiers to summarize the instrumentation needs of the physics drivers and the state of detector technology in the field and identifies promising technologies to pursue with further R&D.

This meeting will provide a community forum for input into the DOE Basic Research Needs (BRN) Study on HEP Detector Research and Development via townhall discussions organized around technology and science drivers.

The workshop will feature a plenary session with overview talks covering physics goals and instrumentation needs and then break into parallel working sessions to discuss specific detector technologies in more detail. A poster session will provide additional opportunity for participants to present their work. The working groups come together again for discussions and summary presentations at the end of the meeting.

The registration deadline is Friday **November 15th**.

On behalf of the scientific program and local organizing committees:

Kimberly Palladino (local chair)

Alvaro Chavarria

Marcel Demarteau

Dmitri Denisov

Maurice Garcia-Sciveres

Ulrich Heintz

Benjamin Jones

Ronald Lipton

Petra Merkel

Ian Shipsey

Rick Van Berg

Bob Wagner

Gensheng Wang

Ozaki Exchange Program

Deadline 20 December, 2019

Ozaki Exchange Program, funded jointly by the U.S. and Japan, was established in 2018 to strengthen U.S.-Japan scientific collaboration and to facilitate greater cooperation in the areas of accelerator and particle physics by supporting the exchange of graduate students between Japan and the United States. All graduate students enrolled, or undergraduate students already accepted for enrollment, in accredited Japanese or U.S. physics Ph.D. programs are eligible to apply. 4 US students and 2 Japanese students were awarded in 2019. The deadline for applications will be December 20, 2019. For more details, please visit <https://www.bnl.gov/ozaki/>.

Conference on Neutrino and Nuclear Physics 2020 (CNNP2020)

24-28 February 2019

Abstract Deadline: 30 October, 2019 - Passed

Opening of registration & Abstracts extension

The International Conference on Neutrino and Nuclear Physics 2020 (CNNP2020) is the second in the CNNP series and will be held from 24-28 February 2020 in South Africa, hosted by iThemba LABS. This conference will bring the nuclear and neutrino communities together in order to exchange ideas and results and build on the very successful inaugural CNNP conference held in Catania, Italy, in October 2017.

We are pleased to announce that the registration process for CNNP2020 opened on 1 October 2019. Furthermore, please note that the period for abstract submissions has passed.

For more information, including the list of confirmed invited speakers, please visit <https://indico.tlabs.ac.za/event/85/> or contact us at cnp2020@tlabs.ac.za.

Local Organizing Committee, CNNP2020

Instrumentation for Colliding Beam Physics (INSTR20)

24-28 February, 2020

Registration deadline: 13 January, 2020

Dear colleague,

We are pleased to inform you that the Conference "Instrumentation for Colliding Beam Physics" (INSTR20) will be jointly organized by the Budker Institute of Nuclear Physics and Novosibirsk State University and held in the Budker Institute, Novosibirsk, Russia in the period from 24 to 28 February, 2020.

Registration is already opened on the website: <http://instr20.inp.nsk.su>

You are kindly invited to participate and register at your earliest convenience. Please also inform all potentially interested colleagues and encourage them to register.

Looking forward to meeting you in Novosibirsk in February 2020.

Organizing Committee