APS DPF

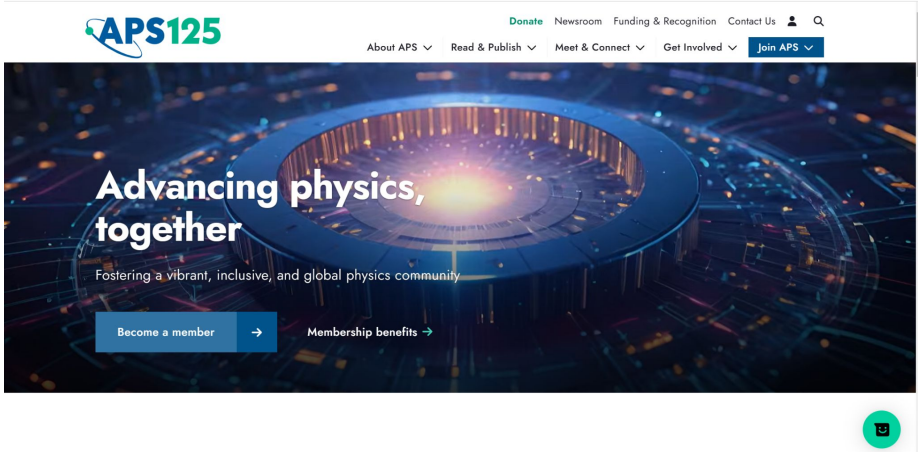
Sarah Eno, Vice Chair DPF
18 Dec 2024

DPF

The Division of Particles and Fields (DPF) is a “unit” of the American Physical Society (APS). The units can be “divisions” (such as DPF), topical groups, forums, and sections. For a complete list, see https://www.aps.org/membership/communities/units

Of particular interest to our community are the Division of Beams (DPB) and the Division of Nuclear Physics (DNP). The Forum of early career scientists could also be of interest.

For more information on APS, please visit aps.org



Why you should join APS/DPF ?

- Help create and support a stronger physics community
- Networking opportunities
- Professional development
- Receive recognition
- **meetings like DPF24 and the upcoming APS25**

DPF undertakes many important initiatives each year;

As a DPF member you can help support these initiatives and take advantage of many of the benefits

DPF initiatives & Benefits:

- Advocacy for our field and for funding
- Communications activities (e.g. monthly newsletter)
- Community-wide events (e.g. Snowmass, the “April” meeting and DPF24)
- Support for accessibility needs
- Financial support for some of our major meetings/conferences
- Travel grants/awards for students and early career persons
- Recognition of colleagues via prizes and awards (e.g. APS Fellowship)
- Opportunities to serve the community
- a path to undertake community-wide initiatives such as CPAD
- and more…

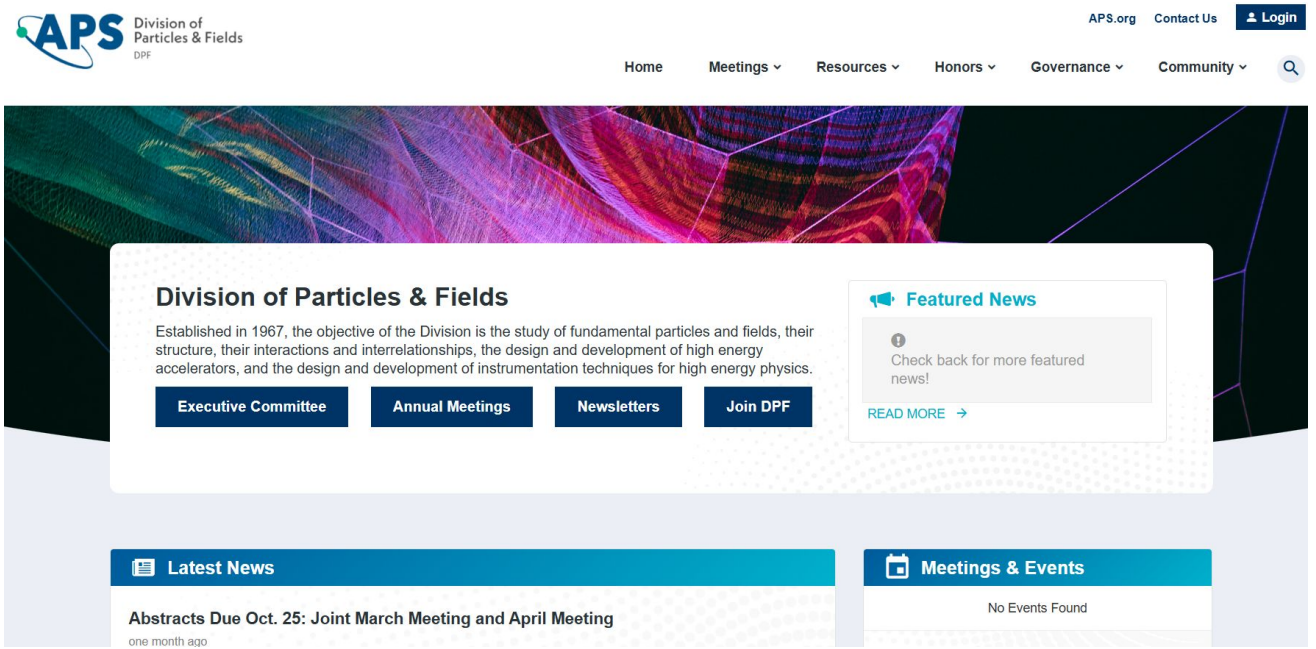
Join the American Physical Society

Add DPF to an existing membership

DPF

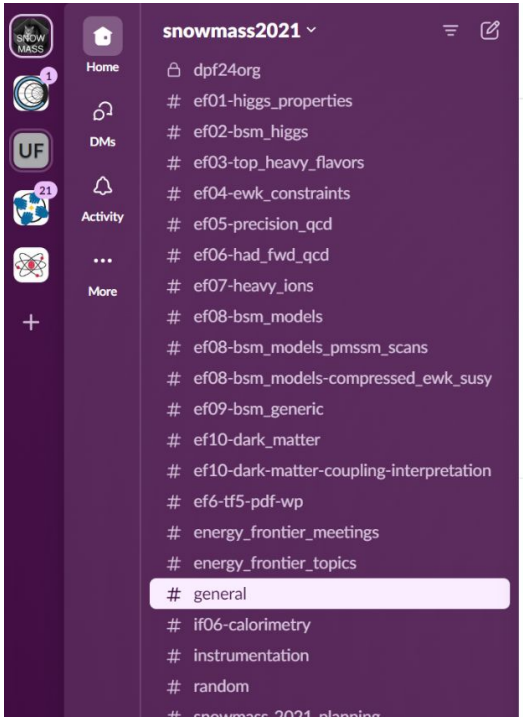
https://engage.aps.org/dpf/home

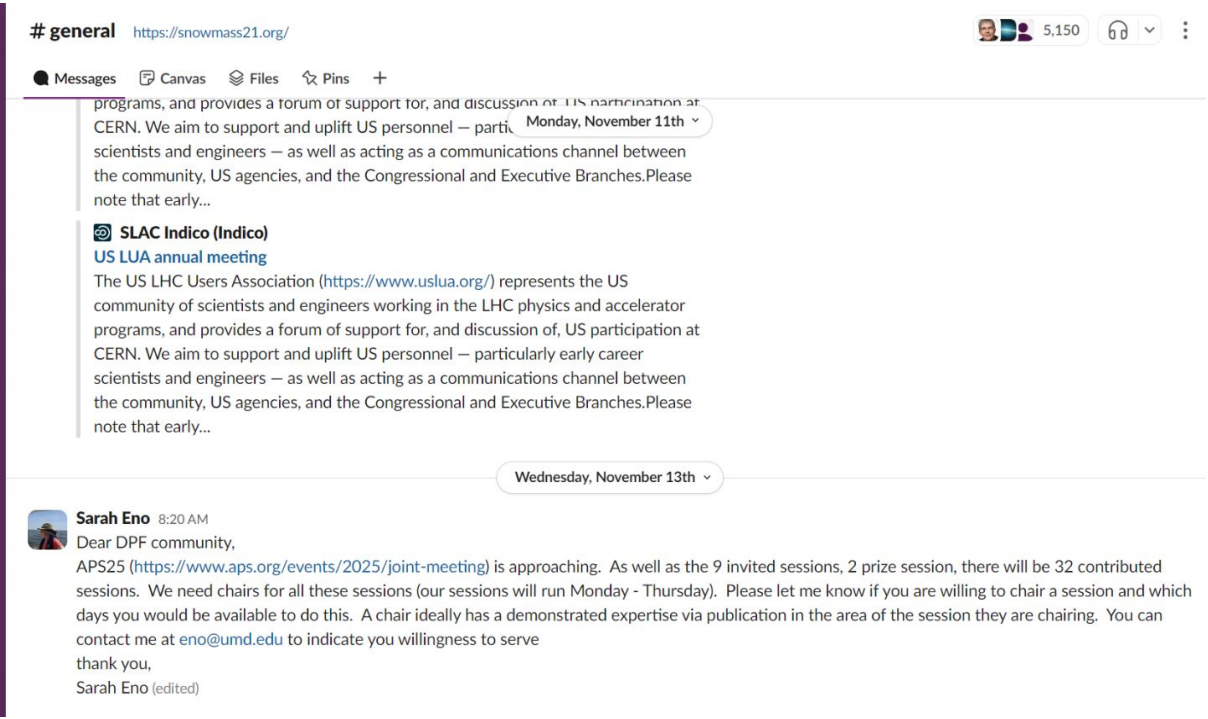
Find monthly news letters



DPF Slack

If you are not yet on it, please join our community Slack channel (it says “snowmass” but it seems to still be the best way for community communication).





To join, send an email to any member of the chair line or to the sec/treasurer

Meet your DPF officers

DPF “chair line” and “executive committee” of DPF are elected.
For 2025, the “chair line officers”, “secretary/treasurer”, and “councilor” are:

Chair emeritus
André de Gouvêa

Chair
Heidi Schellman

Chair elect
Sarah Eno

Vice Chair
Hitoshi Murayama

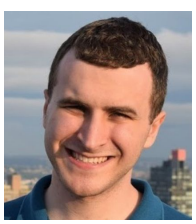
Past
Secretary/Treasurer
Tulika Bose

Secretary/Treasurer
Ken Bloom

Councilor
Bob Bernstein

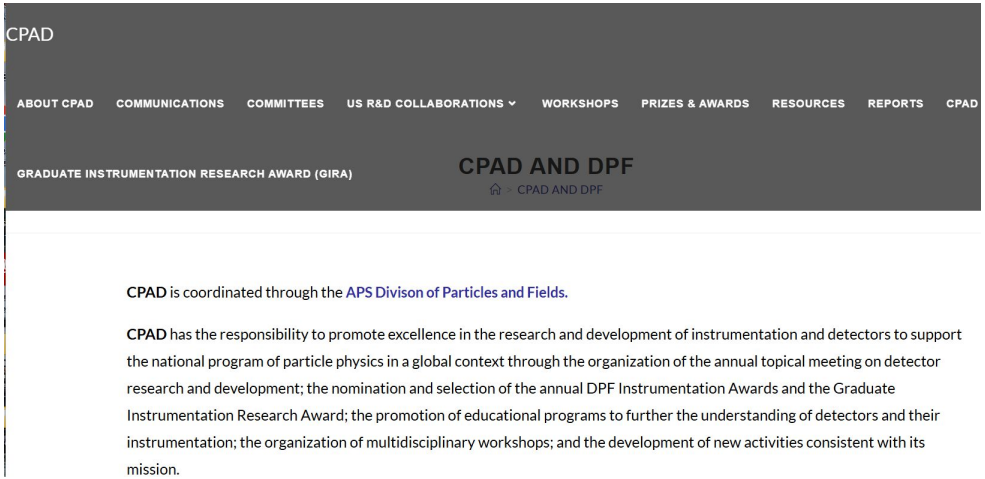
The other members of the executive committee are:

Mark Messier Vaia Papadimitriou Todd Adams Mu-Chun Chen Sarah Demers Nathaniel Craig Samuel Homiller Olivia Bitter Saptaparna Bhattacharya



Coordinating Panels

In addition, CPAD (chair Jinlong Zhang and Jonathan Asaadi) and the newly formed Coordinating Panel for Software and Computing



CPAD conference at U. Tennessee 18-22 Nov

Call for nominations for the 15-member CPSC just completed. We appreciate the large number of nominations (80!). A committee has been formed to select the membership.

Budget

2023 Activities

Total Revenue (through 12/31/2023):

DPF dues	$15,500
Misc. contributions	--
Investment income	4,435
Share of APS meeting	4,715

	$24,650

From Tulika Bose, Secretary/treasurer 2024

Total Expenses in 2023 (12/31/2023):

Programs—Travel Assist/Grants	9480
Meeting costs (reception at APS)	1933
Dues & Membership Grant	550
Miscellaneous (A/V costs)	811

	$12,774

Note: No DPF meeting in 2023, only April APS meeting

Comparison (a more "typical" year with APS+ DPF meetings):

Total Expenses in 2019:

* Travel Assist/Grants (APS & DPF meeting)	$13,986
Non-Staff Travel	2,650
Committee meeting costs	1,648
Audio Visual Expense	447
Meeting Fee Waivers	300
Child Care Grant	300
Dues & Membership Grant	450
Reception Food & Beverage (APS meeting)	6,105

	$25,886

sum of student travel + speakers, misc

* 2019 DPF meeting: around $10,000 spent on $200 - $300 travel awards for undergraduate and graduate students
2019 APS meeting: around $4,000 spend on $400 travel awards for graduate students

Accomplishments in 2024

Fellows 2024

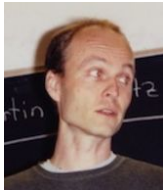
Brendan Casey: Division of Particles and Fields Fellowship
“For the determination of the muon anomalous magnetic moment to 0.2 ppm, design and construction of the tracking detectors for the Muon g-2 experiment that were essential for controlling systematics for the measurement, and for overall leadership of the global charged lepton physics program.”

Douglas Cowen: Division of Particles and Fields Fellowship
“For pioneering contributions to the study of the tau neutrino, including its mass limit using tau decays to five pions, its appearance from oscillations in the atmospheric neutrino flux, and its first high-significance detection in the astrophysical neutrino flux.”

Eric Torrence: Division of Particles and Fields Fellowship
“For significant contributions with the ATLAS and FASER Collaborations, particularly in the searches for new physics, measurement of the LHC luminosity, and for leadership in the operations of both experiments.”

Jaroslav Trnka: Division of Particles and Fields Fellowship
“For deep contributions to exposing hidden mathematical structures in particle scattering amplitudes.”

Martin Schmaltz: Division of Particles and Fields Fellowship
“For contributions to theories for particle physics beyond the standard model, and their implications for cosmology, flavor physics, and electroweak symmetry breaking.”



Patrick Meade: Division of Particles and Fields Fellowship
“For pioneering research and leadership in particle theory and phenomenology, including signatures of gauge-mediated supersymmetry, top partners, long-lived particles, Higgs sectors, phase transitions of the early universe, and the science capabilities of proposed facilities.”

Vaia Papadimitriou: Division of Particles and Fields Fellowship
“For exceptional leadership in advancing our understanding of nature and international high energy physics programs, pioneering and continuing leadership of QCD studies with B particles and quarkonia, high-impact leadership in the LBNF and CMS projects, and key contributions to the success of the Tevatron Collider.”

Yuval Grossman: Division of Particles and Fields Fellowship
“For seminal contributions in flavor physics, especially physics of the D mesons, CP violation in the B system, and novel flavor physics from extra dimensions.”

Zackaria Chacko: Division of Particles and Fields Fellowship
“For discovering two of the major theoretical scenarios for particle physics beyond the Standard Model — neutral naturalness and gaugino mediated supersymmetry breaking — and for inspiring experimental programs to test them.”

Prizes

Eckhard E. Elsen: W.K.H. Panofsky Prize in Experimental Particle Physics
"For pioneering work in establishing the HERA physics program and detectors, leadership in HERA physics exploitation resulting in the measurement of the proton's structure in new kinematic regions of vital importance in confronting new aspects of quantum chromodynamics, and enabling discoveries at the Large Hadron Collider."

Robert Klanner: W.K.H. Panofsky Prize in Experimental Particle Physics
"For pioneering work in establishing the HERA physics program and detectors, leadership in HERA physics exploitation resulting in the measurement of the proton's structure in new kinematic regions of vital importance in confronting new aspects of quantum chromodynamics, and enabling discoveries at the Large Hadron Collider."

Aneesh V. Manohar: J.J. Sakurai Prize for Theoretical Particle Physics
"For outstanding contributions to the physics of baryons, including deriving many physical properties of nucleons and hyperons in the large number of colors limit of quantum chromodynamics and deriving the renormalization group evolution of the standard model effective field theory at one loop."

Elizabeth E. Jenkins: J.J. Sakurai Prize for Theoretical Particle Physics
"For outstanding contributions to the physics of baryons, including deriving many physical properties of nucleons and hyperons in the large number of colors limit of quantum chromodynamics and deriving the renormalization group evolution of the standard model effective field theory at one loop."

Tao Han: Meenakshi Narain Mentoring Award
"For outstanding mentoring, sustained and caring early-career advising, and a quarter century cultivating the welcoming and supportive Phenomenology symposium."

Kevin J. Kelly: Henry Primakoff Award for Early-Career Particle Physics
"For significant contributions to our understanding of the neutrino sector and proposing novel directions and search strategies, bolstering the physics output of current and future neutrino experiments."

Alexander Zholents: Robert Wilson Prize for Achievement in the Physics of Particle Accelerators (joint with the Division of Physics of Beams)
"For many important contributions to particle accelerators and light sources, including ultra-fast X-ray techniques for electron beams and beam cooling methods."

Bylaws

Bylaws Revision

DPF bylaws were last reviewed in 2020. Minor edits were made to bring the bylaws in line with current governance language and consistency with other unit bylaws. In addition, a number of changes were made at the unit's request.

i. Composition of Executive Committee amended to increase Early Career member representation from one member to two members (staggered two-year terms), and to add a Student Member (one-year term).

ii. Clarification added to Article VII.3 on definition of Early Career Members and Student Member and Article VII.6 related to the Early Career and Student Member terms of office.

iii. Nominating Committee membership clarified (the member of the Executive Committee serving on the Nominating Committee shall be the Early Career Member. (Article VIII.1)

iv. Fellowship Committee membership increased from two to four members to comply with APS Honors Guidelines. (Article VIII.3)

v. Coordinating Panel for Advanced Detectors (CPAD) Committee membership increased from six to ten members; language related to the committee chair line term was added for clarity. (Article VIII.4)

vi. Boilerplate Honors Policies and Procedures language was inserted. (Article VIII.7)

vii. Pronouns updated to reflect gender-neutral inclusivity, where noted (two instances).

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APS2024, DPF2024

> It is my privilege to welcome you to the 2024 edition of the APS April Meeting. The meeting gathers a diverse set of scientists united in their pursuit to understand nature at the largest and smallest distance scales, making use of an ever increasing set of probes, tools, instruments, and facilities."
>
> —André de Gouvêa, APS April Meeting 2024 Chair

Plans for 2025

APS25

Will be held joint with the “March” meeting in Anaheim CA 17-20 March. We have an exciting schedule of 12 “invited” sessions, 7 “minisymposia”, and 39 “contributed” sessions.

invited session name	talk	speaker name
R&D for future colliders: 10 TeV (plus two speakers from DPB)	The physics of 10 TeV parton center of mass colliders.	Patrick Meade
R&D for future colliders: Higgs factories (plus one speakers from DPB) (should be on last day)	Detectors for Higgs factories (plus one talk from DPB)	Junjie Zhu
R&D for future colliders: Higgs factories (plus one speakers from DPB) (should be on last day)	Physics of Higgs factories	Gavin Salarm
Highlights in Neutrino Physics	Implications of T2K/NOvA Joint Fit	Zoya Vallari
Highlights in Neutrino Physics	Neutrino flux and cross section highlights	Laura Fields
Highlights in Neutrino Physics	beyond 3 neutrinos	Mark Ross-Lonergan
Collider-based standard model measurements	Precision measurements of EWK parameters at colliders	Tairan Xu
Collider-based standard model measurements	Recent Higgs results	Chris Palmer
Collider-based standard model measurements	Improving the precision of SM calculations	Robert Szafron
New Particle Searches at Colliders	Expanding discovery potential at colliders (new ideas)	Simon Knapen
New Particle Searches at Colliders	Searches in multi-jet final states	Julia Gonski
New Particle Searches at Colliders	hidden valley/dark sector searches (including higgs to dark sectors)	Tamas Almos Vami
The physics of particle flavor	Quark flavor and muon g−2 from lattice QCD (theory)	Aida X. El-Khadra
The physics of particle flavor	charm cp violation	Angelo Di Canto
The physics of particle flavor	Tensions with the standard model in B decays	Phoebe Hamilton
Searches for dark matter	light dark matter (quantum devices, axion)	Danielle Speller
Searches for dark matter	Theory overview of dark matter	Masha Baryakhtar
Searches for dark matter	next generation direct detection/ future of heavy direct detection	Hugh Lippincott
Future Prospects for Neutrino Physics	Theoretical insights into neutrino masses	Bhupal Dev
Future Prospects for Neutrino Physics	Neutrinos in astrophysics and cosmology	Abigail Vieregg
Future Prospects for Neutrino Physics	Neutrino physics at accelerator experiments	Elizabeth Worcester
Astroparticle and cosmology for particle physics	Interface between cosmology and particl	Tim Tait
Astroparticle and cosmology for particle physics	probes of particle physics from the early universe	Anze Slozar
Astroparticle and cosmology for particle physics	Ice Cube probes of particle physics	Mehr U. Nisa
AI/ML and quantum information for particle physics	quantum field theories with quantum computers and quantum simulations	Henry Lamm
AI/ML and quantum information for particle physics	AI/ML in hardware at colliders	Jennifer Ngadiuba
AI/ML and quantum information for particle physics	AI/ML for neutrinos	Taritree Wongjirad
Particle physics in Asia (virtual session during working hours, not at a weird time but at a good time for asia)	Future of particle physics in China	YiFang Wang
Particle physics in Asia (virtual session during working hours, not at a weird time but at a good time for asia)	Future of particle physics in Japan	Hirosi Ooguri
Particle physics in Asia (virtual session during working hours, not at a weird time but at a good time for asia)	Future of particle physics in S. Korea	Youngjoon Kwon

minisymposia name	speaker name
Noble liquids	Hucheng Chen
Lattice QCD	Maarten Golterman
BSM Probes through Neutrino Measurements	Xiao Luo
Top	Andreas Jung
Formula Theory	John McGreevy
Advances in Computing in HEP	Kyle Cranmer
Neutrino mass in the laboratory and the cosmos: looking forward	Eleonora di Valentino

Date/Time	Session Title
Tues, Mid-...	Minisymposium: Formal Theory
Wed, After...	Minisymposium on neutrino physics
Thurs, Mor...	New Perspectives
Tues, Mid-...	Axion searches III
Mon, Mid-day	B-flavor and Advances in Theory
Thurs, 8:30	Cross-Sections and Flux
Mon, Morni...	Higgs studies I
Tues, After...	Dark matter I
Thurs, Mor...	Theoretical Physics I
Tues, Morn...	Minisymposium on particle physics experiments using noble liquids
Wed, Morni...	Dark matter II
Mon, After...	Detectors, 0nu2Beta, and Neutrino Mass
Thurs, Mid-...	Neutrinos and theory
Mon, After...	Axion searches I
Tues, Morn...	Axion searches II
Tues, 8:30	minisymposium on the top quark and beyond
Mon, Mid-day	The BooNEs and Cosmic Neutrinos
Tues, Mid-...	Detectors for colliders I
Tues, After...	Detectors for colliders II
Thurs, Mid-...	Dark matter VI
Thurs, Mor...	Dark matter V
Mon, Morni...	ANNIE, SBND, and ICARUS
Thurs, Mor...	Oscillations and Other Results
Mon, Mid-day	Dark matter VII
Mon, Mid-day	Minisymposium on computing, software, and algorithms in high energy physics
Mon, Morni...	Precision Lepton and Lepton Flavor Violation
Wed, After...	Cosmology and astroparticle physics
Tues, 8:30	COHERENT and PROSPECT
Wed, Mid-d...	Searches and QCD studies at colliders
Thurs, Mid-...	Theoretical Physics II
Wed, Mid-d...	Dark Matter III
Mon, After...	Detector and instrumentation
Wed, After...	Dark matter IV
Wed, Mid-d...	Neutrino Detectors
Wed, Morni...	advanced algorithms 2
Tues, After...	Minisymposium: Muon Anomalous Magnetic Momen
Tues, Morn...	advanced algorithms 1
Thurs, Mid-...	Higgs studies II
Mon, After...	New particle searches at colliders

DPF26: call for institution to host

In the last several iterations, DPF meetings have been organized every two years (in the more distant past, every 18 months)

- DPF/Pheno meeting (Pittsburgh, Spring 2024)
- Community summer study (Seattle, summer 2022)
- DPF meeting (Florida State/Remote, summer 2021)
- DPF meeting (Northeastern, summer 2019)
- DPF meeting (Fermilab, summer 2017)

There is a call out for a host institution for DPF 2026. Details can be found in the November DPF news letters. A deadline of 31 January for submission exists, but we encourage interested parties to let us know their intention to submit ASAP.

Input to the European Strategy Update

CERN and ECFA are leading the preparation of the European Particle Physics Strategy Update (EPPSU) for the next 6-8 years. As part of that process, they have solicited input from a broad range of stakeholders. The Division of Particles and Fields (DPF) encourages efforts in the US to participate in the contribution of white papers to this process. These contributions can either be part of a broader international effort or US-specific. **DPF is happy to help US groups preparing white papers to reach out to our membership via emails such as the one below.**

The deadline to send white papers to the EPPSU is **March 31, 2025** and they should be submitted via the EPPSU website. DPF would much appreciate it if you could also send a copy of your submissions to dpfstrategy@fnal.gov.

Conclusion

- I hope I gave you some idea of what DPF is trying to do for our community
- Please reach out to any of us to participate or share.