Executive Officers

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<tr>
<th>Chair</th>
<th>Chair-Elect</th>
<th>Vice-Chair</th>
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<tr>
<td>Julia Velkovska</td>
<td>William Brooks</td>
<td>Björn Schenke</td>
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<th>Past-Chair</th>
<th>Secretary/Treasurer</th>
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<td>David Gaskell</td>
<td>Jamie Dunlop</td>
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<th>Members at Large</th>
<th>Early Career Member at Large</th>
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<td>Martha Constantinou</td>
<td>Elena Long</td>
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Contact information for the executive committee can be found at: https://engage.aps.org/ghp/executive-committee.

Join GHP by following a link on our web page; namely, from: https://engage.aps.org/ghp/home.

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The 2022 GHP election closed on 19 December. The winners were Björn Schenke, Brookhaven National Laboratory, as Vice Chair, Elena Long, University of New Hampshire, as Member-at-Large and Friederike Bock, Oak Ridge National Laboratory, as Early Career Member-at-Large of the executive. We welcome them to the Executive Committee and thank the other candidates for their willingness to run. We also thank the Nominating Committee for providing an excellent slate of candidates for the election.

The 2022 Nominating Committee was:

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<td>Lamiaa El Fassi</td>
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<td>Susan Gardner</td>
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<td>Ulrich Heinz</td>
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<td>Ernst Sichtermann</td>
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Elections will be held for three posts in the GHP Executive (Vice Chair, Member-at-Large and Student/Early Career Member) in 2023. David Gaskell (Past Chair), Martha Constantinou (Member-at-Large), and Friederike Bock (Early Career Member-at-Large) will have completed their terms. The Early Career Member has a one year term so the Executive will welcome a new member in this position every year.

We urge GHP members now to begin considering whom they would like to see filling the three open positions in 2023 and encourage members with ideas to contact the Chair of the Nominating Committee and pass on their suggestions. There is strength in diversity and so the Executive would like to see nominations from across the entire spectrum of GHP’s membership.

Our rules state that: the Committee shall recommend to the Executive Committee for approval at least two candidates for each open position; the slate of candidates will be balanced as much as possible to ensure demographic diversity and wide representation amongst the various fields of physics included in the GHP’s membership; the Nominating Committee shall be chaired by the immediate Past Chair.

In 2023, the Chair of the Nominating Committee will be

David Gaskell
gaskelld@jlab.org

and shall include four members in addition to its Chair, one of whom shall be appointed by the APS.

Attracting and serving a diverse and inclusive membership worldwide is a primary goal for APS. In calling for nominations, we wish to remind you how important it is to give full consideration to qualified women, members of underrepresented minority groups, and scientists from outside the United States.

In addition, as now stated on the GHP Executive Committee page, nominees and award and office holders are expected to meet standards of professional conduct and integrity as
described in the APS Ethics Guidelines https://www.aps.org/policy/statements/19_1.cfm. Violations of these standards may disqualify people from consideration or lead to revocation of honors or removal from office.

2 Membership

![Graph showing membership trends over years](image)

Figure 1: Solid line – GHP membership, absolute value, with “2023” representing the APS Official Count at the beginning of 2023; dashed – DNP membership normalized to GHP’s value in 2005 (2559 → 304); and dot-dashed – DPF membership normalized to GHP’s 2005 value (3100 → 304).

The GHP membership, after declining for five years, increased to 504 members at the start of 2020, thanks to dedicated efforts of the Executive Committee in 2019. There was significant growth from 2020 through 2022 and the GHP begins this year with 576 members, 8% down from its peak of 628 in 2022. Other units have seen similar reductions. Given the large User Groups associated with RHIC, Jefferson Lab, Fermilab, EIC, and more, we hope for continued growth in the future. If any members are interested in assisting the Executive Committee in its efforts, please circulate this newsletter to your colleagues and students working in hadron physics and explain the benefits of becoming a member of the GHP, such as our Dissertation Award, Fellowships, and Workshops detailed below. Current APS members can add units to their membership online by following a link on the GHP web page https://engage.aps.org/ghp/home.

The GHP is also the only Topical Group that currently has a Dissertation Award for outstanding students in hadron physics. We are one of the few Topical Groups holding a biennial meeting, which is very well attended by the broad hadronic physics community. To
ensure that the significant impact of GHP continues, it is crucial to sustain and grow our GHP membership.

Unit membership is now $10, of which the GHP receives $5 from the APS. The remainder stays with the APS and covers the many services they provide. The APS has also provided additional support to the GHP, e.g., the last five GHP meetings have been co-located with the APS April meeting which results in substantial savings. With this support we can be an active force for hadron physics. GHP membership fees are used to assist with expenses such as travel for the winner of the GHP Dissertation Award see Sec. 4; the organization of meetings such as the forthcoming GHP 2023; the preparation and publication of manuscripts that support and promote the GHP’s activities; and participation in those fora that affect and decide the direction of basic research.

If a Topical Group has a membership of 3% or more of the APS members, it can apply to become a Division. The Soft Matter Topical Group transitioned to Division status in 2019, after only 4 years. There are currently thirteen Topical Groups, with the Topical Group on Data Science established in 2019. GHP remains seventh in size this year and at 1.2% of APS membership. Of the Divisions, Nuclear Physics and Particles & Fields have most overlap with the GHP membership. We typically share invited session sponsorship with DNP at the April meeting but have also partnered with the Divisions of Astrophysics and Computational Physics in invited sessions.

Of our members, 64% are regular or senior members while 31% are in the student or early career category. (Lifetime members, which exist at all levels aside from students, make up 5% of the membership.) In terms of gender diversity, based on those who specified a gender identity, 16.5% of members identify as female while 0.7% identified as non-binary.

3 Fellowship

In 2022 two people nominated by GHP were elected as APS Fellows. They were:

- **Andrei Alexandru**, George Washington University,
  “For multiple advances in the study of hadrons in terms of their quark and gluon constituents using lattice QCD. In particular, for the study of the QCD spectrum and the development of techniques to bypass the sign problem”

- **Renee Fatemi**, University of Kentucky,
  “For contributions to the understanding of the spin and momentum structure of quarks and gluons in the proton through the novel development and application of jet reconstruction tools in polarized proton collisions”

The Executive Committee would like to remind the GHP membership that each year the APS allocates a number of Fellowship Nominations to a Topical Group. That number is based primarily on membership. The rubric excludes student members and current Fellows in the membership count to obtain eligible members. Since we are again above 500 members, we are allocated TWO Regular nominations for 2023.

The instructions for nomination may be found at [http://www.aps.org/programs/honors/fellowships/nominations.cfm](http://www.aps.org/programs/honors/fellowships/nominations.cfm)

The entire process is now online.
Note that one does not have to be a Fellow to nominate a colleague for Fellowship.

A few things to know before proceeding, however. One must:

- Ensure the nominee is a member of the Society in good standing as well as a member of GHP. The online site will do this for you but it’s best to check beforehand, to save yourself time or get your nominee to join APS and GHP.

- A nomination requires a sponsor and a co-sponsor. During the online nomination process, you will be required to provide details for a co-sponsor. After you complete a nomination, the co-sponsor will be notified by EMail. It would be best to coordinate with the co-sponsor beforehand.

- In addition to the nomination letters, you will require supporting letters, that will need to be uploaded to the APS web site. Two letters of support are sufficient. Individuals providing letters of support do not have to be members of the APS, however the sponsor and co-sponsor should be APS members.

- The nomination process should be complete prior to GHP’s deadline:

  **Wednesday 1st June 2023**

The APS will subsequently forward the nominations to the GHP Fellowship Committee, chaired by the GHP Vice-Chair, Björn Schenke.

The Executive urges members of GHP to nominate colleagues who have made advances in knowledge through original research and publication or made significant and innovative contributions in the application of physics to science and technology. They may also have made significant contributions to the teaching of physics or service and participation in the activities of the Society. The diversity of the Fellow candidates should reflect the GHP as a whole, both in terms of gender and in terms of physics interests.

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4 Dissertation Award

The 2023 recipient of the Dissertation Award in Hadronic Physics is

- **Glòria Montaña Faiget**, University of Barcelona,
  “For outstanding progress in understanding the properties of heavy mesons in hot matter with the combination of non-perturbative hadronic theories and finite-temperature field theories”.

Glòria Montaña obtained her Bachelor’s degree in Physics from the University of Barcelona (2016) and the Spanish Inter-University Master’s Degree in Nuclear Physics (2017), finishing second and first of her promotion, respectively, with an academic record full of honors and the Extraordinary master’s degree Award. She was awarded the competitive FPU predoctoral grant from the Spanish Ministry to pursue a doctoral degree. In July 2022, Glòria received her Ph.D. from the University of Barcelona, for which she received the Excellent Cum Laude qualification. Her dissertation work, completed with the joint supervision of Dr. Àngels Ramos (University of Barcelona) and Dr. Laura Tolós (Institute of Space Sciences, ICE),
focused on the description of heavy-flavored hadrons and their properties in a hot medium using effective field theories. Now a postdoctoral fellow in the Theory Center at Jefferson Lab and a member of the JPAC Collaboration, Glória is broadening her research in hadron spectroscopy to include amplitude analysis to support the physics studied at Jefferson Lab and related facilities around the world.

This award recognizes outstanding early-career scientists who have performed original research in the area of hadronic physics.

The APS Topical Group on Hadronic Physics presents the award annually, consisting of $1,500, a certificate, up to $1,500 in travel reimbursement, and a registration waiver to receive the award and give an invited talk at the biennial meeting of the Topical Group on Hadronic Physics.

This award was established in 2011 with support from Jefferson Science Associates, LLC (the management contractor for Jefferson Lab), Brookhaven National Laboratory, Universities Research Association (the management contractor for Fermi National Accelerator Lab), and the members and friends of the Topical Group on Hadronic Physics. The award was permanently endowed in 2021 with the support of the Center for Frontiers in Nuclear Science and additional support from the friends of this Topical Group.

Following the current GHP bylaws, the Dissertation Award committee for the 2024 award will comprise

Julia Velkovska
julia.velkovska@vanderbilt.edu

and four other members appointed by the Chair, with the approval of the Executive Committee. More information on the nomination deadline and the committee for the 2024 Award will be forthcoming.

5 GHP 2023: the 10th Biennial Workshop of the APS Topical Group on Hadronic Physics

April 12-14, 2023
https://indico.jlab.org/event/667/

The 10th biennial workshop of the APS Topical Group on Hadronic Physics (GHP2023) provides great opportunities for nuclear and particle physicists to meet and discuss their common interests in hadronic interactions. The workshop precedes the in-person 2023 April Meeting of the American Physical Society (April 15-18, 2023) and will take place at the same venue.

Workshop topics include:

- Artificial intelligence and machine learning for hadron physics
- Electron Ion collider and other future initiatives
- Electroweak probes
• Extreme matter and neutron star collisions
• Hadrons in nuclei
• Hadron spectroscopy
• Hadron tomography
• Hadronization
• Heavy flavor and jet production
• Neutrino-hadron interactions
• New physics and discrete symmetry violation in hadron physics
• Nonequilibrium dynamics
• Nucleon and nuclear spin physics
• Origin of hadron mass
• Physics of the quark-gluon plasma
• Quantum information for hadron physics
• Small systems and collectivity
• Transverse and longitudinal structure of hadrons
• Ultraperipheral Collisions

The organizing committee has put together an excellent scientific program. In addition, there will be a business meeting of the Topical Group at 6 PM CDT on April 12. We hope to see you there!

6 GHP Program at the APS April Meeting, 2023

https://april.aps.org

GHP is allocated two invited sessions at the April meeting. We often organize joint sessions with other units, in order to raise our profile by increasing the number of sessions sponsored by the GHP. (The maximum currently possible via this method is four.)

The program committee for the 2023 APS April meeting is

GHP Program Committee

Julia Velkovska (Chair)

julia.velkovska@vanderbilt.edu

David Gaskell  Christopher Monahan  Sanghwa Park  Anna Stasto  Ivan Vitev

The Program Committee has prepared an excellent program for the April 2023 meeting. There will be two invited sessions co-sponsored with DNP and one standalone GHP invited session. There will be three GHP sponsored mini-symposia (two of which co-sponsored with DNP) - two of the mini-symposia will highlight physics from the invited sessions. In addition
to the invited sessions and mini-symposia, GHP has four contributed sessions, two of which are in the in-person meeting and two – at the virtual meeting.

The GHP invited and contributed program is listed here. Note that the meeting time zone will be Central Daylight Time, CDT.

6.1 GHP invited

Computational Approaches in Hadronic Physics
   Session G03, Sunday 16 April 10:45-12:33

Heavy flavor production and interaction from hot to cold QCD
   Session H03, Sunday 16 April 1:30-3:18 PM (Joint with DNP)

Modern 3D Structure of Hadrons
   Session Q03, Monday 17 April 3:45-5:33 PM (Joint with DNP)

GHP: Mini-Symposium: Heavy Flavor Production From Heavy Ion to Electron Ion Collisions
   Session B10, Saturday 15 April 10:45 AM - 12:33 PM

GHP: Mini-Symposium: Nuclear Effects in Hadronic Physics
   Session C10, Saturday 15 April 1:30-2:54 PM

GHP: Mini-Symposium: Studies for EIC physics and detector design
   Session F15, Saturday 16 April 8:30-9:54 AM

6.2 GHP contributed sessions, in person

Hadronic Physics: General
   Session M17, Monday 17 April 10:45-11:47 AM

Nucleon and Meson Structure
   Session U10, Tuesday 18 April 1:30-2:30 PM

6.3 GHP contributed sessions, virtual

V: Hadronic Physics I
   Session LL01, Tuesday 25 April 8:00-9:24 AM

V: Hadronic Physics II
   Session WW02, Wednesday 26 April 8:00-9:24 AM
7 Contributed Reports

NB. We would be pleased to receive input from GHP membership, in particular from people at labs with hadron physics programs who are willing to prepare input and clear it with their lab’s leadership. The following contribution should serve as a template.

7.1 News from Jefferson Lab

(Communicated by Thia Keppel and Douglas Higginbotham)

Jefferson Lab completed its scheduled 2022/23 run period at 7 a.m. on March 20. This marked the end of a 33-week run period, with two weeks dedicated to the tuning of the machine and 31 weeks for physics. Due to improvements to the accelerator, CEBAF successfully maintained a gradient of 10.5 MeV/linac. Including the injector energy, this meant that the classic Experimental Halls A, B and C received electron beams at energies of up to 10.56 GeV, while the new Experimental Hall D, which gets an extra pass through one linac, received 11.6 GeV electrons for the entire run period. As is typical for the Jefferson Lab CEBAF accelerator, the electron beam was sent to all four halls simultaneously, with the different halls getting different currents, up to 80 uA, and with up to 85% longitudinal polarization.

Experimental Hall A’s Super BigBite program is presently focused on making high precision, high four-momentum transfer measurements of the nucleon form factors transitioned from measuring the magnetic form factor of the neutron to measurements of the electric form factor of the neutron. This measurement makes use of polarized 3He targets, which achieved up to 55% polarization using delicate glass target cells operating at 10 atm.

Experimental Hall B began the run group C experiments. This run group is made up of six approved experiments using a vector polarized proton and deuteron ammonia target to make measurements of the spin structure of protons and neutrons and various meson production channels with deep inelastic scattering and deeply virtual Compton scattering techniques. Unfortunately, there was a problem with the power supply for the CLAS12 magnet during this run period. Thanks to the support of Danfysik, a problem with the power supply firmware was found, the supply was fixed, and the experiment continued.

Experimental Hall C saw a number of experiments completed. First, the pion longitudinal-transverse separation experiment took its final data. This high-impact experiment required many different beam energies and took several years to complete. After this experiment was complete, solid target ladders were installed for the next experiment. This one measured more than 20 different solids to further our understanding of the connection between the EMC effect and short-range correlations with both inclusive scattering and a proton knock-out reaction. Finally, Hall C took measurements on deuterons in extreme quasi-elastic kinematics to further our understanding of the nucleon-nucleon potential.

Experimental Hall D completed its measurement of the charged pion polarizabilities and its precision measurement of the eta radiative decay width via the Primakoff effect. After completion of these two experiments, the hall was reconfigured, and the first part of the GlueX-II run was started.

Presently, the CEBAF accelerator is being upgraded with two refurbished C100 accelerating modules. This will further improve the reliability of the machine as work continues to get the CEBAF accelerator back up to it full 12 GeV operational limit. The 2023/24 run period will see Hall A continue its high Q2 form factor program; Hall B will continue its 3D imaging of the proton and deuteron; and Hall C will start the NPS, neutral particle spectrometer.
experiments. Experimental Hall D has started a year-long shutdown to upgrade its calorimeter in preparation for the final part of the GlueX-II experiment.

7.2 RHIC Run 23

(Communicated by Jamie Dunlop)

Spring greetings from Long Island! While the trees haven’t put out their leaves, we have started with the early flowers and the first bright yellow smudges of forsythia. The trees around here spend the month of April waiting for the last freezes to end and building up their sap before unfurling their leaves in full majesty in May. Likewise, sPHENIX will spend the month of April finishing the final connections and checkout of its subdetectors, in preparation for first beam in May.

But first, 2022. The last polarized proton run at the maximum energy of RHIC, $\sqrt{s}=510$ GeV, ended successfully on April 18, 2022. For this run, STAR had a suite of new detector systems in the forward direction, consisting of a Hadronic Calorimeter, an Electromagnetic Calorimeter, and two types of tracking detectors. The run used the collision of transversely polarized proton beams to measure processes closely related to those that will be studied at the future Electron-Ion Collider, to explore the universality of those processes. All data-taking goals were reached or exceeded.

After the shutdown of beam operations, the completion and installation of the new sPHENIX detector subsystems began in earnest. The Inner Hadronic Calorimeter was installed inside the bore of the superconducting magnet in early June. Much of the summer and fall were spent on installation of cryogenic and conventional systems, along with modules of the Electromagnetic Calorimeter, culminating in a successful cool-down to cryogenic temperatures and detailed mapping of the magnetic field in November. The Time Projection Chamber was installed in January, followed by the Intermediate Silicon Tracker (INTT) at the beginning of March, and the Monolithic Active Pixel Sensor Vertex Tracker (MVTX) at the end of March. April will be spent in final connections and checkout, in preparation for first data in May.

The 2023 (and 2025) RHIC run will collide Au beams at the highest energy the accelerator can run these beams, using all of the accelerator systems such as Stochastic Cooling and the new 56 MHz RF system to increase the luminosity usable to the experiments. RHIC was last run in this mode in 2016, the last year of the Heavy Flavor campaign. Relative to these earlier runs, sPHENIX’s data rate will lead to an order of magnitude increase in the information recorded for inspection, while STAR has dramatically increased its angular acceptance with its Inner TPC and Forward upgrades and increased its data rate by a factor of 2. The last 3 years of RHIC data-taking will produce a rich dataset to be combed through for years to come.

So, as we come fully into spring the upgrades to the RHIC detectors are almost complete. The sPHENIX detector is on schedule to take first data in May, launching RHIC’s final campaign to probe the scales of the Quark-Gluon Plasma using jets, quarkonia, charm and beauty. RHIC is currently on track to reap the fruits of recent investments in upgrades to produce the physics these upgrades were built to access.
8   Forthcoming Hadron Physics Meetings

Meetings of interest to GHP’s membership are listed on: https://sites.google.com/lbl.gov/hadronic-physics-conferences/home. If there is a meeting you feel should be included, please send the appropriate information to Shujie Lie (shujie.lie@lbl.gov) or John Arrington (jarrington@lbl.gov).

*Disclaimer*

The comments and contributions in this newsletter are not peer reviewed. They represent the views of the authors but not necessarily those of the American Physical Society.

This GHP Newsletter was edited by Jamie Dunlop for the Executive Committee.