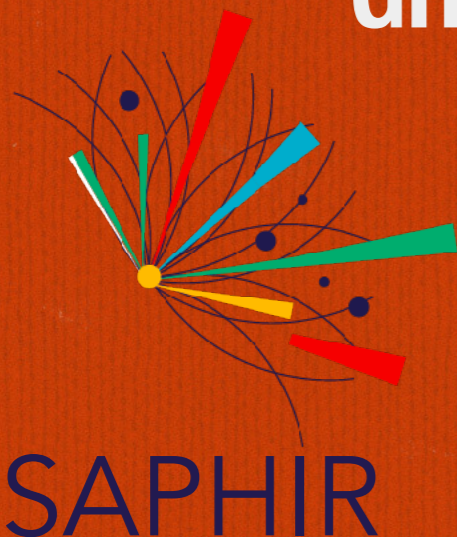


Fellowship and Prizes

Will Brooks (GHP Chair-elect)

Universidad Técnica Federico Santa María
Valparaíso, Chile

GHP Business Meeting, April 12, 2023



GHP Fellowships 2022

- 2022 GHP APS Fellowship Committee**
 - William Brooks (Universidad Santa María), Chair
 - Dmitri Kharzeev (BNL and Stonybrook University)
 - Barbara Pasquini (University of Pavia)
 - Karl Slifer (University of New Hampshire)
- Committee met virtually, with additional communications by email
- Many excellent nominations for APS Fellowship
- Two candidates could be recommended:
 - This is based on the number of GHP members

2022 GHP Fellow



“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”

**Renee Fatemi
(University of Kentucky)**

2022 GHP Fellow Talk



2022 GHP Fellow: Using spin to probe the structure of the universe

📅 14 Apr 2023, 16:30

🕒 30m

📍 Marquette IV-VII

Plenary Session

Speaker

👤 Renee Fatemi (University of Kentuck...

Friday!

Description

The intrinsic spin of fundamental particles emerges naturally from relativistic quantum mechanics, implying a deep connection between spin dynamics and the forces that ultimately shape the structure of our universe. Spin is therefore an excellent probe into the nature of complex theories, such as Quantum Chromodynamics, where the manifestation of spin correlations in dynamic objects like the proton, or the hadronization process of quarks and gluons, is not fully understood. It can also be used as a tool to probe new physics, including the measurement of the anomalous magnetic moment of the muon. This talk will discuss the speaker's recent spin adventures, with protons and muons, and what she has learned about the universe.

Renee Fatemi
(University of Kentucky)

2022 GHP Fellow



“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”

**Andrei Alexandru
(George Washington University)**

2022 GHP Fellow Talk



Andrei Alexandru
(George Washington University)

📅 12 Apr 2023, 11:00

🕒 30m

📍 Marquette IV-VII

Plenary Session

Speaker

(was) Today!

👤 Andrei Alexandru (The George Washing...)

Description

Hadron scattering information can be accessed indirectly from lattice QCD by computing the spectrum of multi-hadron states and connecting to the infinite volume amplitudes via quantization conditions. This methodology was applied successfully for the two-hadron case to extract phase-shifts and resonance parameters. Only recently this methodology was extended to the three-hadron sector: both lattice QCD calculations and developing quantization conditions is more challenging in this sector. I review our results for two and three meson scattering and their connection with infinite volume amplitudes.

2021 GHP Fellow Talk



Christina Markert
(UT Austin)

2021 GHP Fellow: Studies of hadronic resonances in heavy ion collisions and how it resonates with my life

📅 14 Apr 2023, 15:30

🕒 30m

📍 Marquette IV-VII

Plenary Session

Friday!

Speaker

👤 Christina Markert (The University of Tex...

Description

I will give an overview of the findings via the observation of hadronic resonances in heavy ion collisions from SPS to RHIC and LHC energies. The short-lived resonances are interacting through the full evolution of the collision and can be used to probe the dynamics of the partonic and hadronic matter. I started this topic with my PhD research topic at the SPS and

2021 GHP Fellow Talk



Swagato Mukherjee
(BNL)

2021 GHP Fellow: Lattice QCD: A Journey from RHIC to EIC



📅 Apr 14, 2023, 4:00 PM

Plenary Session

🕒 30m

📍 Marquette IV-VII

Friday!

Speaker

👤 Swagato Mukherjee (Brookhaven Nationa...)

Description

I will present a short overview of some of the important developments in lattice QCD calculations in the context of relativistic heavy-ion collision experiments at RHIC. I will outline why lattice QCD calculation will play a critical role in the scientific success of the future EIC, and present some progress along these directions.

GHP Fellowships 2023

**2023 GHP Fellowship Committee will be chaired by Bjoern Schenke
(Brookhaven National Laboratory)**

**Please consider nominating your colleague or collaborator!
We encourage nominations of a diverse set of candidates!**

**The criterion for election is exceptional contributions to the
physics enterprise; e.g., outstanding physics research,
important applications of physics, leadership in or service to
physics, or significant contributions to physics education.**

The nomination deadline is Thursday, JUNE 1, 2023

See instructions at this link:

<https://www.aps.org/programs/honors/fellowships>

2023 Dissertation Award

2023 Dissertation Award Committee:

- Dave Gaskell (Jefferson Lab), co-chair
- Ian Cloët (Argonne National Lab), co-chair
- Alexander Bazilevsky (Brookhaven National Lab)
- Yordanka Ilieva (University of South Carolina)
- Jacquelyn “Jaki” Noronha-Hostler (University of Illinois Urbana-Champaign)
- Misak Sargsian (Florida International University)

Criteria: Dissertation quality, 40%; student contributions to the field, 30%; impact, 20%; broader community impact, 10%.

2024 GHP Dissertation Award Committee: chair will be Julia Velkovska, four other members will be appointed by the chair, with approval of Executive Committee

Application deadline: Tuesday, August 1, 2023

Instructions: <https://www.aps.org/programs/honors/prizes/hadronic.cfm>

2023 Dissertation Award



**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."

2023 Dissertation Award Talk



**Glòria Montaña Faiget
(University of Barcelona)**

2023 GHP Dissertation Award: Heavy-flavor mesons in a hot medium



📅 Apr 14, 2023, 2:30 PM

Plenary Session

🕒 30m

📍 Marquette IV-VII

Speaker

👤 Gloria Montana (Jefferson Lab)

Description

Mesons with heavy flavor content are a promising probe of the hot QCD phases produced in heavy-ion collisions. I will present our recent progress on the thermal modification of the properties of heavy mesons in hot mesonic matter. We use a self-consistent theoretical approach that employs an effective field theory based on chiral and heavy-quark spin-flavor symmetries. We apply the imaginary-time formalism to extend to finite temperature the calculation of the unitarized

**2023 Dissertation award talk:
Friday, April 14, plenary session
5 (immediately after lunch)**

<https://www.aps.org/programs/honors/prizes/hadronic.cfm>

2022 Dissertation Award Talk



Davide Giusti
Universität Regensburg

2022 GHP Dissertation Award: Weak decays of hadrons using high-precision lattice simulations

Apr 14, 2023, 2:00 PM

30m

Marquette IV-VII

Plenary Session

Speaker

Davide Giusti (University of Regen...)

Description

The leading uncertainty in obtaining precise fundamental information from particle physics experiments is often due to the difficulty of quantifying non-perturbative strong-interaction effects.

Over the last decade, Lattice QCD simulations, in which space and time are approximated by a discrete lattice of points, have improved in precision to the extent that a number of important quantities can be computed with a precision approaching, or even exceeding, 1%.

In order to make further progress in exploring the limits of the Standard Model and searching for new physics therefore, electromagnetic corrections must be included. This creates new theoretical challenges on the lattice associated with the long-range nature of the Coulomb interaction.

2022 Dissertation award talk:
Friday, April 14, plenary session
5 (immediately after lunch)

[https://www.aps.org/programs/honors/prizes/prizerecipient.cfm?
first_nm=Davide&last_nm=Giusti&year=2022](https://www.aps.org/programs/honors/prizes/prizerecipient.cfm?first_nm=Davide&last_nm=Giusti&year=2022)

GHP Newsletter

Information-dense newsletter, very useful.

<https://engage.aps.org/ghp/resources/newsletters>

APS GHP website:

<https://engage.aps.org/ghp/home>

Executive Officers

<i>Chair</i>	<i>Chair-Elect</i>	<i>Vice-Chair</i>
Julia Velkovska	William Brooks	Björn Schenke
<i>Past-Chair</i>	<i>Secretary/Treasurer</i>	
David Gaskell	Jamie Dunlop	
<i>Members at Large</i>		<i>Early Career Member at Large</i>
Martha Constantinou	Elena Long	Friederike Bock

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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