Finalize your plans now to attend the April 2021 meeting held virtually this year. A number of plenary and invited sessions will feature presentations by DAP members. Here are the key details:

**What:** April 2021 APS Meeting  
**When:** April 17 - 20, 2021  
**Where:** Online  
**Abstract Deadline:** Jan 8, 2021, 5 pm EST  
**Travel Grant Deadline:** Jan 31, 2021  
**Early Registration Deadline:** Feb 26, 2021  
**Late Registration Deadline:** Mar 26, 2021

The 2021 April Meeting will be virtual.

Detailed information for the meeting, including details on registration and the scientific program can be found online at [https://april.aps.org/](https://april.aps.org/)

**HEADS-UP:** The ELECTION for next year’s DAP Executive Committee and chairline will be held soon. Be on the lookout for the announcement from APS, and please vote!
Dear DAP,

Please see the January 2021 DAP newsletter below. It will be archived on the DAP website ([https://www.aps.org/units/dap/newsletters/index.cfm](https://www.aps.org/units/dap/newsletters/index.cfm)). If you have content you’d like to include in a future newsletter or distribute to DAP membership, please send it to us at dapsectreas@googlegroups.com.

For questions, suggestions, feedback, please contact the DAP Executive Committee at dap-exec@googlegroups.com.

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### 2020 APS Fellows

Please join the DAP Executive Committee in congratulating the 2020 American Physical Society Fellows who are members of the Division of Astrophysics:

- **James H. Buckley** (Washington University in St. Louis): *For foundational work in the development of the dark matter (DM) annihilation technique in search of the particle nature of DM, for study of gamma rays from active galaxies and supernovae, and for designing high-speed electronics and data acquisition systems for gamma-ray telescopes.*

- **Ruth A. Daly** (Pennsylvania State University): *For studies of radio properties in supermassive black holes, leading to their use as cosmic rulers, and providing early evidence of their role in cosmic acceleration, and insight into the spin properties of the supermassive black holes that power the outflows.*

- **Brian Fields** (University of Illinois): *For pioneering contributions to cosmology, nuclear and particle astrophysics, nucleosynthesis, cosmic-ray physics, gamma-ray astronomy, astrobiology, and supernovae.*

- **Lucy Frear Fortson** (University of Minnesota): *For groundbreaking innovations to public engagement in astrophysics research, and for the fundamental advancement of understanding active galactic nuclei through leadership in high energy gamma ray astronomy.*

- **Manoj Kaplinghat** (University of California, Irvine): *For developing astrophysical and cosmological methods to measure fundamental properties of dark matter and neutrinos, including outstanding contributions to the study of dwarf galaxies as a probe of dark matter physics and developing the idea that dark matter could have large self-interactions.*

- **Rita Sambruna** (National Aeronautics and Space Administration Goddard Space Flight Center): *For exceptional contributions to the fundamental understanding of relativistic jets from supermassive black holes, and for leadership in, and service to, the field of astrophysics.*

- **Belinda J. Wilkes** (Harvard-Smithsonian Center for Astrophysics): *For significant contributions to the understanding of active galactic nuclei, including their emission mechanisms and evolutionary pathways, and for innovative leadership of the Chandra X-ray Observatory.*
2021 Bethe Prize

Please join the DAP Executive Committee in congratulating James W. Truran (University of Chicago, Illinois) the 2021 recipient of the DAP-DNP Hans A. Bethe Prize.

The citation reads: “For distinguished contributions across the breadth of nuclear astrophysics, Galactic chemical evolution and cosmochronology.”

APS Fellows and DAP Membership

Although nominations have closed for this year, please consider nominating a deserving colleague for 2021 APS Fellowship. Nominations will be due approximately June, 2021.

In order to ensure a strong Division of Astrophysics, we ask you to encourage your colleagues to join the APS and to join the DAP (at marginal extra cost) if they have not already done so. Moreover, if you have colleagues whom you would like to nominate as APS Fellows but who are not currently APS/DAP members, please encourage them to join as soon as possible: only APS members are eligible for Fellowship, and they must be Members in good standing as of January 1 of the preceding year to be eligible for nomination and election to Fellowship.

Eligibility and application details:
https://www.aps.org/programs/honors/fellowships/index.cfm

Encourage your students to join the APS and DAP

The next generation of physicists are current students. The APS has many programs to help students grow their careers. Students can join the APS with the first year free and the low rate of $39/year thereafter; they can join up to two Divisions and Topical Groups for free. Please see the APS website for details.
Once students are members, students are eligible to give talks at APS meetings, apply for travel support and merit-based awards, and more. Student DAP members can apply for up to $600 in travel support to attend the April Meeting (or registration waivers, in the case of the virtual 2021 April Meeting); they can also be nominated to be considered for the Thesis Prize, which includes giving an invited talk with additional travel support.

One of the main goals of the APS is to "advance and diffuse the knowledge of physics." This includes advocacy with the government and the press, connecting different parts of the community, publishing leading journals, running meetings with great opportunities for students, providing professional recognition, and more. In a similar way, the DAP works to advance and diffuse the knowledge of astrophysics, which includes helping the APS carry out the above missions.

Astrophysics is on a great run of important discoveries that impact many fields. We are working to grow the scope of the DAP to better include new developments in cosmology, gravitation, particle and nuclear astrophysics, and more. Advisors can play a crucial role in encouraging their students to join the APS and DAP. Please forward this to yours!

**Student/Early Career Meeting Awards**

The DAP will offer meeting awards in the form of registration waivers to support the attendance of graduate students, advanced undergraduate students, postdocs, and junior faculty (especially those at primarily teaching institutions). The award will cover registration fees for undergraduate, graduate, or early career categories for those who are presenting talks or posters in DAP-sponsored sessions. Preference will be given to applicants who have not received travel grant support from DAP to an APS meeting in the past. The funds will target to assign support for 1 early career person for every 3 students, and those applications will be evaluated separately.

The deadline for DAP Student/Early Career Meeting Award applications is January 31, 2021.

DAP will inform the recipients of the awards prior to the APS discounted registration deadline. The registration waiver is applied at registration checkout, so please wait to register for the meeting until you hear from DAP, or it will not be possible to apply the waiver.

**Eligibility and application details available:**
https://engage.aps.org/dap/honors/prizes-awards/student-travel
April APS Meeting, 2021
Virtual Meeting, April 17-20 (Sat 8:30 am - Tues 3:30 pm)

Plenary Program  (Dierdre Shoemaker, April Meeting Program Chair)

Kavli Keynote Plenary: Nobel Prize Session (8:30am, April 18, Saturday)
- Andrea Ghez (UCLA)
- Reinhard Genzel (MPIE)
- Roger Penrose (Cornell)

Plenary II: Science on a Global Scale (8:30am, April 20, Monday)

Plenary III: Advancing an Inclusive Community in Science (8:30am, April 21, Tuesday)

Public Lecture Saturday night 7 pm:  Neutrinos

DAP-sponsored Invited Sessions  (Chris Fryer, DAP Program Chair)

Atomic Physics and Kilonova Emission (Chris Fontes, Chair) [co-sponsored with DAMOP]
- Calculating Opacities for Lanthanides -- Marianna Safronova
- Mass Ejecta from Neutron Star Mergers -- Francois Foucart
- Modeling Kilonova Light-Curves -- Ryan Wollaeger

Nuclear Physics Constraints From Neutron Star Mergers, (Nicole Vassh, Chair) [co-sponsored with DNP]
- Cross Sections for Neutron Rich Isotopes -- Alfredo Estrade
- Nuclear Network Calculations of Kilonova Ejecta — Jonas Lippuner
- Yield Constraints from Neutron Star Merger Observations - Eleonora Troja

LIGO and NICER Constraints on the Neutron Star Equation of State (Sanjay Reddy, Chair) [co-sponsored with DGRAV]
- Nuclear Equation of State Predictions for Neutron Stars -- Ingo Tews
- LIGO Constraints on the Neutron Star Equation of State -- Tanja Hinderer
- NICER Constraints on the Neutron Star Equation of State -- Tom Riley and Cole Miller

Electromagnetic Signals from LISA Events (Jonathan Gair, Chair) [co-sponsored with DGRAV]
- Periodicity, Doppler shifts and lensing in signals -- Daniel D'Orazio
- Review of LISA and GRMHD calculations -- Jeremy Schnittman
- EM emission from tidal disruption of WDs -- TBD

Recent Results on Pulsar Timing Astrophysics (Maura McLaughlin, Chair) [co-sponsored with DGRAV]
- The NANOGrav 15yr Dataset -- Megan DeCesar
- High-cadence Timing of Radio Pulsars with CHIME -- Emmanuel Fonseca
- MSP timing with MeerKAT -- Renee Spiewak

Coalescence Rates of Compact Binary Systems (Chris Fryer, Chair) [co-sponsored with DGRAV]
- Coalescence rates of Binary Black Hole systems -- Carl Rodriguez
- Coalescence rates from LIGO/Virgo observations -- Thomas Dent
- Coalescence of binary neutron star systems from short gamma ray bursts -- Eric Burns

**Compact Remnant Masses and the Neutron Star/Black Hole Mass Gap** (Richard O'Shaugnessy, Chair) [co-sponsored with DGRAV]
- Filling in the Mass Gap: GW190814 -- Vicky Kalogera
- Masses from EM observations of Compact Binaries -- Jerome Orosz
- Neutron Star Mass Limits -- Katerina Chatziioannou

**New Frontiers in Dark Matter Research** (Yanou Cui, Chair) [co-sponsored with DPF]
- Complementarity of accelerators, direct detection, and cosmological probes of light DM -- Louis Strigari
- Complementarity of accelerators, direct detection, and cosmological probes of light DM -- Natalia Toro
- Dark Sector, dark photons, etc. -- Yu-Dai Tsai

**The Impact of Sterile Neutrinos** (Janet Conrad, Chair) [co-sponsored with DPF]
- Particle Physics of Sterile Neutrinos -- Georgia Karagiorgi
- Sterile Neutrinos and Astrophysics -- Carlos Arguelles
- Sterile Neutrinos and Cosmology -- Graciella Gelmini

**Quantum Enhanced Dark Matter Searches** (Karl van Bibber, Chair) [co-sponsored with GPMFC]
- Squeezed-Vacuum States for Wave-like Dark Matter Searches -- Konrad Lehnert
- A Quantum-Enhanced Search for Dark Matter Axions -- Kelly Backes
- Advances in Qubit-Based Single-Photon Detection for Future Dark Matter Searches -- Rakshya Khatiwada

**Update on the H_0 Controversy** (Dan Holz, chair)
- Cosmological tensions in the context of large-scale structure -- Misha Ivanov
- CMB perspective on cosmological tensions -- Silvia Galli
- Dark matter constraints from small scale structure -- Risa Wechsler

**Fast Radio Bursts** (Emmanuel Fonseca, chair)
- FRBs and Optical Follow-Ups -- Emily Petroff
- FRBS, Morphology and Repetition -- Ziggy Pleunis
- FRBs, Propagation Effects and CHIME data -- Pragya Chawla

**Recent Results from eRosita** (Erin Kara, chair)
- Mission status and AGN Surveys first results -- Andrea Merloni
- First results on clusters of galaxies -- Esra Bulbul
- First results on (what else!) transient science -- Joern Wilms

**Dark Energy** (Josh Frieman, chair)
- TBD, Michael Troxel
- TBD, Alexandra Amon
- TBD, Ami Choi

**DNP/DAP Joint Award Session** (Krishna Kumar, chair)
- **Bethe Prize Talk 2019**: Ultraluminous X-ray sources: Extremes of accretion and the search for intermediate mass black holes -- Fiona Harrison
- **Bethe Prize Talk 2020**: TBD -- Jim Truran
- **APS Medal**: TBD -- Gordon Baym

**DAP/DPF Joint Award Session** (Glennys Farrar, chair)
- Maria Goeppart-Mayer Award Presentation: Elisabeth Krause
- Lillienfeld Prize talk: -- Joel Primack
- Edward A. Bouchet Award: -- Chanda Prescod-Weinstein
- Lillienfeld Prize talk: -- William M. Jackson

**Cecilia Payne-Gaposchkin Thesis Prize** (Laura Blecha, Chair)
DAP-sponsored mini-symposium

*Dark Energy Spectroscopic Instrument (DESI) - On Sky* (Eric Linder, Chair)

- The DESI spectroscopic pipeline performances: Julien Guy
- Status of DESI Target Selection: Jeff Newman
- The Dark Energy Spectroscopic Instrument (DESI): Claire Poppett
- BAOs of DESI galaxies in Early Dark Energy cosmologies: Francisco Prada
- DESI System Throughput from Fiber Dither Analysis: Eddie Schlafly
- Effects of Observational Systematics on DESI Cosmology: Ryan Staten
- Cross-correlation of CMB lensing with DESI galaxies: Martin White
- Mapping luminous red galaxies at high redshift: Rongpu Zhou

DAP Abstract Sorting Categories (some in common with other units)

A01. Astrophysics: General Topics
A02. Dark Matter Astrophysics
A03. Dark Matter Constraints
A04. Dark Matter Theory and Cosmology
A05. Early Universe and Dark Energy
A06. Large Scale Structure and CMB
A07. Cosmology with Gravitational Waves
A08. Gravitational Wave Astronomy
A09. Compact Object Mergers
A10. Formation and Growth of Black Holes
A11. Merger Outflows and Jets
A12. Supernovae, Gamma-Ray Bursts, and Other Transients
A13. Pulsars and Neutron Stars
A14. Cosmic Rays: Sources and Acceleration
A15. Cosmic Rays: Spectrum and Composition
A16. Gamma Ray Astronomy
A17. Neutrino Astronomy
A18. Stars; the Interstellar Medium and Magnetic Fields
A20. Missions, Instruments, and Surveys
A21. New, Future, and Upgraded Observatories
A22. Advances in Spectroscopic Cosmology Minisymposium
Snowmass Update

Because of the COVID-19 pandemic, the Snowmass Report will be delayed by one year and the overall schedule for the Snowmass process will be adjusted accordingly.

Statement from the Snowmass Steering Committee (G. R. Farrar, DAP representative):

Over the past year, the U.S. particle physics community has skillfully navigated many challenges to keep projects moving forward and enable experiments to continue producing excellent results. We learned from DOE and NSF at the HEPAP meeting on December 3-4, 2020 that some important scientific milestones will arrive later than anticipated. For this reason, extending the timeline of the Snowmass and P5 process would enable our community’s scientific vision and the subsequent prioritization exercise, to be fully informed by the anticipated progress in our field as those milestones are met over the coming year.

Soon after the HEPAP meeting, we reached out to the community for feedback on the Snowmass schedule and we would like to thank the many of you who sent us your thoughtful responses. In addition, frontier conveners and early-career representatives have collected further input from topical group conveners, frontier members and early-career members.

With all of this information, the Snowmass Advisory Group, all frontier conveners, and early career representatives met and decided to delay the Snowmass process by one year. This delay will allow a broader community (especially those who have been struggling in engaging in the Snowmass process due to circumstances related to coping with COVID-19) to participate more meaningfully in the Snowmass process.

The new Snowmass timeline includes:

- Preliminary Topical Group Reports – Spring 2022
- Preliminary Frontier Reports – late Spring 2022
- Snowmass Community Summer Study – Summer 2022 in University of Washington, Seattle
- Snowmass Book – October 2022

The deadline for contributed papers will be delayed but the specific date will be decided by end of January 2021.
Originally scheduled frontier-level Spring 2021 workshops will be moved to later times.

In January 2021, each Frontier will communicate with their own and related frontier communities to develop a detailed work plan. While our goal is to have uniformity among the frontiers, we will provide some flexibility to accommodate specific needs of various groups. Frontier plans will be established by January 31, 2021 and will be available at Snowmass wiki page.