2020 GPMFC Election Candidates

Vice Chair (two candidates)

- Haiyan Gao
- Mike Snow

Executive Committee Member-at-Large (four candidates)

- Beatrice Franke
- Adam M. Kaufman
- Joan Marler
- Amar Vutha

Vice Chair

Haiyan Gao (Vice Chair Candidate)

Positions: Henry Newson Professor of Physics, Duke University, 2012-present; Professor of Physics, Duke University, 2008-present; Associate Professor of Physics, Duke University, 2002-2008; Associate Professor of Physics, MIT, 2002-2004; Assistant Professor of Physics, MIT, 1997-2002; Assistant Physicist, Argonne National Laboratory 1996-1997; Postdoctoral Researcher, University of Illinois, Urbana-Champaign, 1994-96 Ph.D., Caltech, 1994; B.S. Tsinghua University, Beijing, China, 1988.

Main Research Interests: Nucleon structure including precision measurements of the proton charge radius and nucleon tensor charge, quantum chromodynamics (QCD) exotic particle/state; fundamental symmetry studies and search for new physics beyond the Standard Model; development of polarized gas targets

Other Activities/Awards: Chair, Physics Department at Duke University (2011-2014); founding Vice Chancellor for Academic Affairs at Duke Kunshan University (2015-2019); APS fellow (2007); DOE OJI award (2000); the Executive Board of the APS (2013-2014), the Executive Committee of the Division of Nuclear Physics of the APS (2013-2015), the National Academies of Sciences, Engineering and Medicine Committee on U.S.-Based Electron Ion Collider Science Assessment (2017-2018); the Nuclear Science Advisory Committee (NSAC) Long Range Plan Working Group (2014-2015); chair of the International Spin Physics Committee (2017-2020).

Mike Snow (Vice Chair Candidate)

Positions: Professor, Indiana University, 2004-present; Associate Professor, Indiana University, 1999; Assistant Professor, Indiana University, 1993; Ph.D., Harvard University, 1990.

Main Research Interests: (1) Nuclear/particle/astrophysics through laboratory measurements with slow neutrons and polarized nuclei. Measurement of the neutron lifetime, neutron-nucleon weak interactions, and neutron-nucleus scattering lengths. Searches for time reversal violation using polarized slow neutrons. Searches for axions, axion-like particles, CPT violation, torsion, and other exotic spin-dependent interactions beyond the Standard Model using neutrons and nuclei. (2) Neutron scattering from condensed matter. Measurements of the Bose condensate fraction in superfluid 4He. Measurement of single-particle quantum entanglement of neutron beams and their interaction with condensed matter. (3) Development and applications of slow neutron measurement. Measurement of absolute neutron fluence, polarization, and rotary power. Development of slow neutron polarizer, moderator, and source technology.

Other Activities/Awards: APS Fellow (GPMFC), Director of the Indiana University Center for Spacetime Symmetries, Program Advisory Committee of the European Spallation Source, member of various NSF, DOE, and international review panels, at-large member of the Executive Committee of the APS Topical Group on Precision Measurements and Fundamental Constants

Executive Committee Member-at-Large

Beatrice Franke (Member-at-Large Candidate)

Note: main affiliation TRIUMF

Positions: Adjunct Professor, University of British Columbia, Vancouver, 2020-present; Research Scientist (Associate Professor level), TRIUMF, Vancouver, 2019-present; Research Scientist (Assistant Professor level), TRIUMF, Vancouver, 2016; Postdoctoral Researcher, Max Planck Institute for Quantum Optics, Garching, 2014 - 2016; Ph.D. Fundamental Physics with Neutrons, Eidgenoessische Technische Hochschule Zürich and Paul Scherrer Institute, 2009 - 2013; B.Sc. & M.Sc Engineering Physics, Technische Universität München, 2002 - 2009.

Main Research Interests: Low energy and high precision particle physics. Using ultracold neutrons and light muonic atoms, I study fundamental symmetries and interactions as well as intrinsic properties of particles and light nuclei - the most basic building blocks of matter. I'm a member of the TUCAN (TRIUMF ultracold advanced neutron) and CREMA (charge radius experiments with muonic atoms) collaborations. My main scientific focus lies on the development of a next generation spectrometer for the search of the neutron electric dipole moment at TRIUMF.

Adam M. Kaufman (Member-at-Large Candidate)

Positions: Associate JILA Fellow, 2017 - present; Assistant Professor Adjoint, CU Boulder, 2017 - present; Post-doctoral fellow, Harvard University, 2015 - 2017; Ph.D., University of Colorado Boulder/JILA, 2015.

Main Research Interests: New architectures for optical atomic clocks, with a focus on optical tweezer arrays and single-particle detection; Developing protocols to realize entanglement in a metrology setting, understanding theoretically and practically where associated enhancements

are useful. Quantum information with neutral atoms in optical tweezers. Developing efficient tools to measure entanglement in many-body quantum systems, particularly in dynamics.

Other Activities/Awards: ONR YIP, 2020; DAMOP Thesis Prize, 2016; Member of APS

Joan Marler (Member-at-Large Candidate)

Positions: Assistant Professor of Physics, Clemson University (2013-present); Postdoctoral Scientist, Northwestern University (2009-13); Postdoctoral Scientist, University of Aarhus (2007-09); Lawrence Fellow, Lawrence University (2005-07); Ph.D., University of California-San Diego (2005); B.A., Wellesley College (1999).

Main Research Interests: Experimental investigations of the atomic properties of highly charged ions (HCIs). UV/VIS and x-ray spectroscopy of multicharged ions. Precision spectroscopy with HCIs for tests of fundamental constants and nuclear properties. Qubit modalities with trapped ions.

Other Activities/Awards: Member, American Physical Society, APS (2004-); Member, European Physical Society, EPS (2007-); Member, Laboratory Astrophysics Division AAS, LAD (2018-); Editorial Board Member, European Physical Journal D, (2016-); Workshop LOC chair, SELAC, Southeast Laboratory Astrophysics community, (2019).
Website: http://iontrapping.sites.clemson.edu/

Amar Vutha (Member-at-Large Candidate)

Positions: Canada Research Chair, 2016-present**;** Asst. Professor, University of Toronto, 2015-present; Ph.D., Yale, 2011.

Main Research Interests: I am both surprised and excited by the notion that measurements on atoms and molecules could shed light on cosmological questions. I have worked on an electron electric dipole moment search using ThO molecules, and a measurement of the proton radius using hydrogen atoms. I am working on improving the precision of electric dipole moment searches, as part of the PolyEDM and EDMCubed collaborations.

Other Activities/Awards: Member of the Organizing Committees for ICPEAC 2021 and ICAP 2022; Sloan Fellowship, 2018