

March Meeting 2015

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[M23. Focus Session: Petascale Science and Beyond: Applications and Opportunities in Materials Science and Chemistry II](#)
[M24. Electronic Structure Methods III](#)
[M25. Theory of Superconductivity I](#)
[M26. Nanowires: Mechanical, Electronic, Optical, and Transport Properties](#)
[M27. Invited Session: Prize Session: Broida, Pyler, Langmuir, Phd](#)
[M28. Focus Session: Spin Liquids II](#)
[M29. Focus Session: Spin-Torque Oscillators](#)
[M30. Focus Session: Magnetism in Carbon and Nanoclusters](#)
[M31. Focus Session: Ladders, Layers, and Dimers](#)
[M32. Focus Session: Multiferroics II and Other 3d Transition Metal Oxides](#)
[M33. Metal Physics: Thermodynamics, Transport, Optical Properties, Electronic Structure, etc.](#)
[M35. Casimir Effect and Dispersive Interactions](#)
[M36. Interacting Fermi Gases II](#)

[M37. Focus Session: Quantum Optics and Photonic Architectures](#)
[M38. Focus Session: Quantum Foundations and Technologies II](#)
[M39. Focus Session: Superconducting Qubits: Hybrid Systems](#)
[M41. Microwave Quantum Optics & Circuit QED](#)
[M43. Focus Session: Industry Day: Applied Polymer Physics in Advanced Manufacturing](#)
[M44. Focus Session: Systems Far from Equilibrium III](#)
[M45. Focus Session: Emerging Topics in Network Synchronization: Patterns, Stability, and Transitions](#)
[M46. Invited Session: Physics for Everyone](#)
[M47. Invited Session: Insights into Ferroelectric and Multiferroic Materials from Computational Methods](#)
[M49. Liquid Crystals I: Chromonics, Discotics, Polymers and Functional Uses](#)
[M51. Invited Session: Topological Superconductivity in Ferromagnetic Metal Chains](#)
[M52. Invited Session: Entanglement in Condensed Matter Systems](#)
[M53. Invited Session: Iridium-Based Kitaev Materials](#)

[Session P](#)
[P1. Poster Session II \(11:00 am - 2:00 pm\)](#)

[Session Q](#)
[Q0. Kavli Foundation Special Symposium: Frontiers of Light](#)
[Q1. Focus Session: Graphene: Moire, Superlattices, and Twisted Bilayers](#)
[Q2. Focus Session: Beyond Graphene - Optics in 2D Semiconductors IV](#)
[Q3. Invited Session: Condensed Matter Physics in Latin America II](#)
[Q4. Invited Session: Fractional Quantum Hall Effect: New Directions](#)
[Q5. Focus Session: Search for New Fe-based Superconductors II](#)
[Q6. Focus Session: Coupling Polarization and Magnetism II](#)
[Q7. Topological Insulators: Theory and Experiment](#)
[Q8. Focus Session: Wave Chaos: Theory and Applications](#)
[Q9. Semiconductor Thermodynamic & Transport Properties](#)
[Q10. Emergent Dirac and Weyl Semimetals in Three Dimensions](#)
[Q11. Chalcogenide Superconductors](#)
[Q12. Focus Session: Theory of Bulk Thermoelectric Materials](#)
[Q13. Focus Session: Complex Oxide Interfaces - LaAlO₃/SrTiO₃ II](#)
[Q14. Focus Session: Dopants and Defects in Hybrid Perovskite and Other Materials](#)
[Q15. Focus Session: Energy and Electron Flow at Interfaces in Nanostructures](#)
[Q16. Focus Session: van der Waals Bonding in Advanced Materials: Nano-Materials](#)
[Q17. Graphene: Disorder and Defects](#)
[Q18. Invited Session: Recent Advances in Field-Responsive Fluids and Suspensions](#)
[Q19. Invited Session: Industry Day: Rheology and Processing for Additive Manufacturing](#)
[Q20. Focus Session: Superconductivity in the 2D Limit II](#)
[Q21. Metal Insulator Transitions](#)
[Q22. Heavy Fermions: Ce-based Compounds: Experiment](#)
[Q24. Focus Session: Quantum Monte Carlo Simulations of Fermion and Boson Systems II](#)
[Q25. Focus Session: Cooperative Phenomena in Plasticity II](#)
[Q26. Focus Session: Non-Adiabatic Dynamics: New Insights from Experiment and Theory IV](#)
[Q27. Focus Session: Chemical Physics of Clusters: Bridging from Angstrom-scale Clusters to Micron-scale Aerosol Particles IV](#)
[Q28. Focus Session: Honeycomb Antiferromagnets](#)
[Q29. Focus Session: Spin-waves and Magnetization Dynamics](#)
[Q30. Focus Session: Magnetic Films and Magnetic Anisotropy](#)
[Q31. Focus Session: Spin-Dependent Phenomena in Semiconductors: Spin Injection](#)
[Q32. Focus Session: Magnetic Oxide Thin Films and Heterostructures: Electric Field and Magnetoelectric Effects](#)

[Q33. Physics Education Research](#)
[Q34. Fluid Dynamics - General](#)
[Q35. Many-body Localization and Disordered Optical Lattices](#)
[Q36. Focus Session: Self-assembled Block Copolymers and Soft Nanoparticles in Solution II](#)
[Q37. Focus Session: Semiconductor Qubits - Hybrid Systems and Electrons Floating on Liquid Helium](#)
[Q38. Focus Session: Ground State Quantum Computing and Quantum Annealing](#)
[Q39. Focus Session: Polymer Nanocomposites - Active Particles and Dynamics](#)
[Q41. Focus Session: Organic Electronics and Photonics - Structure-Property Relationships](#)
[Q42. Focus Session: Theory and Simulation of Macromolecules I](#)
[Q43. Focus Session: Manipulating Glasses, Theory and Experiment](#)
[Q44. Networks and their applications](#)
[Q45. Transport in Charged and Ion-Containing Polymers](#)
[Q46. Rheology and Flow of Soft Materials](#)
[Q47. Physics of Bacteria and Viruses](#)
[Q48. Focus Session: Physics of Proteins: Dynamics and Function III](#)
[Q49. Focus Session: Swimmers](#)
[Q50. Focus Session: Reconfiguring and Actuating Soft Matter II: Tunable Interactions](#)

[Session R](#)
[R3. The Division of Materials Research at NSF - Mary Galvin-Donahue, Division Director, followed by discussion of Broader Impacts in Research](#)
[R6. Transformational Opportunities for Energy Sciences](#)
[R20. "App-y" Hour](#)
[R21. Joint Task Force on Undergraduate Physics Programs](#)
[R47. Review of Trends in Biological Physics](#)
[R50. NSBP& NSHP Receptions](#)
[R51. LGBT Roundtable Discussion](#)
[R52. Special Evening Event Hosted by the Editors of Physics](#)
[R53. Diversity Networking Reception](#)
[R54. Staged Reading of the Play: Background](#)

[Session S](#)
[S1. Focus Session: Beyond Graphene - Atomic Scale Properties](#)
[S2. Focus Session: Beyond Graphene - Optics in 2D Semiconductors V](#)
[S3. Invited Session: Why Peer Review?](#)
[S4. Physics Education Research: Course Transformation and Outreach](#)
[S5. Focus Session: Spin Fluctuations and Pairing Symmetry in Fe-based Superconductors](#)
[S6. Focus Session: Nanostructures and Metamaterials III](#)
[S7. Focus Session: Dirac & Weyl Semimetals](#)
[S8. Disordered and Glassy Systems](#)
[S9. Vanadium Oxides, Resistive Switching, and Interfaces with Oxides](#)
[S10. Topological Insulators - Mainly Transport Properties \(Theory\)](#)
[S11. Superconductivity: MgB₂, Organics, Pd-Chalcogenides](#)
[S12. Focus Session: Low Dimensional Thermoelectric Systems and Theory II](#)
[S13. Focus Session: Oxide-Semiconductor Interfaces, Oxygen Vacancy Defects, Doped SrTiO₃](#)
[S14. Focus Session: Dopants and Defects in III-V and II-VI Semiconductors](#)
[S15. Bio/Nano Applications Including Sensors](#)
[S16. Focus Session: Graphene Devices: Function, Fabrication, and Characterization: van der Waals Heterostructures](#)
[S17. Graphene: Transport Properties](#)
[S18. Invited Session: Statistical Physics for Electric Grids](#)
[S19. Invited Session: Additive Manufacturing: The Promises and Risks](#)
[S20. Invited Session: Ion-Containing Polymers](#)

[S21. Spectroscopic Techniques](#)
[S22. Strong Correlations in Low Dimensional Systems](#)
[S23. Simulations of Matter at Extreme Conditions](#)
[S24. Quantum Many-Body Systems and Methods I](#)
[S25. Focus Session: Search for New Superconductors I](#)
[S26. Focus Session: At the Interface of Molecules and Materials: IV](#)
[S27. Focus Session: Solvation of Ions and Electrons II](#)
[S28. Focus Session: Kagome Antiferromagnets I](#)
[S29. Correlated Electron Magnetism I](#)
[S30. Magnetic Anisotropy and Permanent Magnets](#)
[S31. Focus Session: Spin-Dependent Phenomena in Semiconductors: Magnetic Semiconductors](#)
[S32. Focus Session: Magnetic Oxide Films and Heterostructures: Electrostatic and Strain Effects](#)
[S33. Focus Session: Conformations and Dynamics of Biopolymers I](#)
[S34. Biofuels, Solar Fuels and Artificial Photosynthetic Systems](#)
[S35. Optomechanics, Hybrid Systems and Macroscopic Systems at the Quantum Limit](#)
[S36. Focus Session: Driven Systems and Quench Dynamics In Interacting Bosons](#)
[S37. Semiconductor Qubits - Gated Dots and Impurities I](#)
[S38. Mechanical Systems](#)
[S39. Focus Session: Superconducting Qubits: Materials and Characterization](#)
[S41. New Directions in Polymer Physics](#)
[S42. Electrically and Optically Active Polymers](#)
[S43. Focus Session: Dynamics of Glassy Polymers Under Confinement I](#)
[S44. Focus Session: Granular Materials and Continuum Descriptions of Discrete Media I](#)
[S45. Focus Session: Polymer Nanocomposites: Dynamics](#)
[S46. Invited Session: Hybrid Spin-Strained Systems in Diamond](#)
[S47. Focus Session: Mechanical Structure-Function Relations in Biological Matter I](#)
[S48. Focus Session: Physics of Evolutionary and Population Dynamics I](#)
[S49. Focus Session: Migration of Cells, Droplets, and Particles on Substrates: Mostly Active Nematics](#)
[S50. Self- and Directed Assembly](#)
[S51. Invited Session: The Valley Hall Effect in van der Waals Materials](#)
[S52. Invited Session: Partial Order and Spin Liquids In Novel Frustrated Materials](#)
[S53. Invited Session: Symposium on Novel Phenomena in Helium in Reduced Dimensions and Confinement](#)

[Session T](#)
[T1. Focus Session: Beyond Graphene - Silicene and Germanene](#)
[T2. Focus Session: Beyond Graphene - Interaction & Correlation Effects](#)
[T3. Invited Session: Network and Grid Resilience](#)
[T4. Focus Session: Building New Pathways in Physics Innovation and Entrepreneurship Education](#)
[T5. Focus Session: Disorder in Fe-based Superconductors](#)
[T6. Focus Session: Iridates and Osmates](#)
[T7. Focus Session: Dirac, Weyl Semimetals, Kondo Insulators](#)
[T8. Plasmonic Phenomena in Metallic Nanostructures](#)
[T9. Physics and Applications of Photonics and Lasers](#)
[T10. Topological Insulators: Synthesis](#)
[T11. Superconductivity: Heavy Elements and Spin-Orbit Effects](#)
[T12. Focus Session: Non-Oxide Nanostructures and Artificially Structured Materials and Related Phenomena](#)
[T13. Focus Session: Nickelate and Vanadate Heterostructures](#)
[T14. Focus Session: Dopants and Defects in TiO₂, SrTiO₃, and Other Oxides](#)
[T15. Nanotechnology](#)

[T16. Focus Session: Graphene Electronic Devices I](#)
[T17. Focus Session: Graphene Devices: Function, Fabrication, and Characterization: Graphene Nanostructures](#)
[T18. Invited Session: Keithley Award Symposium](#)
[T19. Invited Session: FIAP Prize Session and the Forum on Entrepreneurship in Physics](#)
[T20. Invited Session: Recent Frontiers of Quantum Thermodynamics: From Theory to Experiment](#)
[T21. Numerical Methods for Correlated Electrons](#)
[T22. Localization and Disorder in Strongly Correlated Systems](#)
[T23. Multiscale Modeling](#)
[T24. Electronic Structure Methods IV](#)
[T25. Focus Session: Search for New Superconductors II](#)
[T26. Computational Applications and Methods I](#)
[T27. Focus Session: Solvation of Ions and Electrons III](#)
[T28. Focus Session: Spin-Hall Effect II](#)
[T29. Correlated Electron Magnetism II](#)
[T30. Focus Session: Exchange Spring Magnets and Multilayers](#)
[T31. Focus Session: Ruthenates and Other Oxides](#)
[T32. Focus Session: Transition Metal Oxides II](#)
[T33. Focus Session: Conformations and Dynamics of Biopolymers II](#)
[T34. Materials for Electrochemical Energy Storage I](#)
[T36. Focus Session: Novel Phases With Cold Atoms, Molecules and Ions](#)
[T37. Focus Session: Semiconductor Qubits - Optically Addressed Dots and Impurities II](#)
[T38. Quantum Characterization and Tomography](#)
[T39. Focus Session: Quantum Foundations Studies with Superconducting Qubits](#)
[T41. Polymer Nanocomposites I](#)
[T42. Focus Session: Theory and Simulation of Macromolecules II](#)
[T43. Focus Session: Dynamics of Glassy Polymers Under Confinement II](#)
[T44. Focus Session: Granular Materials and Continuum Descriptions of Discrete Media II](#)
[T45. Transport in Polymer Membranes](#)
[T46. Invited Session: From Bacteria to Eukaryotes: Shape Organization in Living Matter](#)
[T47. Focus Session: Mechanical Structure-Function Relations in Biological Matter II](#)
[T48. Focus Session: Physics of Evolutionary and Population Dynamics II](#)
[T49. Focus Session: Reconfiguring and Actuating Soft Matter III: Shape](#)
[T50. Liquid Crystals II: Chiral and Nanocomposites](#)
[T51. Invited Session: Soft Matter Nanophotonics: DNA-Directed Assemblies of Metal Clusters and Metal Nanoparticles](#)
[T52. Invited Session: Dirac Physics in Bulk Semimetals](#)
[T53. Invited Session: DMP Prize Session](#)

[Session V](#)
[V1. Poster Session III \(2:00 pm - 5:00 pm\)](#)

[Session W](#)
[W1. Focus Session: Graphene: Nanostructures](#)
[W2. Focus Session: Beyond Graphene - Devices I](#)
[W3. Invited Session: Growing the Physics Major](#)
[W5. Focus Session: Magnetism and Transport in Fe-Based Superconductors](#)
[W6. Focus Session: Nanostructures and Metamaterials IV](#)
[W7. Focus Session: Novel Topological Phases: Theory II](#)
[W8. Focus Session: Optical And Electrical Properties Of Metamaterials And Photonic Crystals](#)
[W10. Topological Insulators: Optical and Other Properties \(Theory\)](#)
[W11. Cuprates: Josephson Junctions](#)
[W12. Insulators: Synthesis and Experiment](#)

[W13. Focus Session: Manganite Thin Films and Interfaces](#)
[W15. Glasses and Quasicrystals](#)
[W16. Focus Session: Graphene Electronic Devices II](#)
[W17. Focus Session: Graphene Devices: Function, Fabrication, and Characterization: Graphene Surface Characterization](#)
[W18. Invited Session: Novel Approaches for Quantum Information Processing With Polar Molecules](#)
[W19. Invited Session: Frontiers of Electronic Structure Theory for Materials](#)
[W20. Invited Session: Physics of Biomacromolecules](#)
[W21. Density Waves in Superconductors and Other Systems](#)
[W22. Focus Session: Carbon Nanotubes and Related Materials: Thin Films & Networks](#)
[W23. Focus Session: Anderson Localization](#)
[W24. Electronic Structure Methods V](#)
[W25. Focus Session: Cooperative Phenomena in Plasticity III](#)
[W26. Computational Applications and Methods II](#)
[W27. Charge Transport and Plasmonics](#)
[W28. Focus Session: Spin Caloritronics](#)
[W29. Focus Session: Spin-Dependent Physics in Carbon-Based Materials](#)
[W30. Focus Session: Frontiers in Magnetism I](#)
[W31. Focus Session: Spin-Dependent Phenomena in Semiconductors: Spins in Quantum Dots and Impurities](#)
[W32. Focus Session: Iridates](#)
[W33. Focus Session: Conformations and Dynamics of Biopolymers III](#)
[W35. Colloidal Clusters, Interactions, and Synthesis](#)
[W36. New Developments in Cold Atom Physics](#)
[W37. Focus Session: Semiconductor Qubits - Gated Dots and Impurities II](#)
[W39. Focus Session: Superconducting Qubits: Measurement and Novel Architectures](#)
[W41. Polymer Nanocomposites II](#)
[W42. Focus Session: Multiscale Modeling of Polymers](#)
[W43. Focus Session: Dynamics of Glassy Polymers Under Confinement III](#)
[W44. Focus Session: Jamming in Granular Media I](#)
[W45. Structure and Phase Behavior of Charged and Ion Containing Polymers](#)
[W46. Invited Session: Collective Behavior and Jamming in Multi-Cellular Systems](#)
[W47. Membranes: Biological and Synthetic](#)
[W48. Physics of Evolutionary and Population Dynamics III](#)
[W49. Focus Session: Migration of Cells, Droplets, and Particles on Substrates](#)
[W50. Liquid Crystals III: Nematic and Twist Bend Phases](#)
[W51. Invited Session: Recent Advances in Spin Transport: Spin Pumping and the Spin Hall Effect](#)
[W52. Invited Session: The Upside of Noise: Engineered Dissipation in Quantum Many-Body Physics and Quantum Computing](#)
[W53. Invited Session: Discoveries in SrTiO₃](#)

[Session X](#)
[X1. Science Film: An Aperture into Science Advocacy](#)

[Session Y](#)
[Y1. Focus Session: Graphene - Multilayer and Interfacial Effects](#)
[Y2. Focus Session: Beyond Graphene - New 2D Materials](#)
[Y4. Materials for Electrochemical Energy Storage II](#)
[Y5. Focus Session: Fe-based Superconductors -- Materials Synthesis and Characterization](#)
[Y6. Optical and Electrical Properties of Hybrid Nanostructures](#)
[Y7. Insulators: Transport, Spectroscopies, etc.](#)
[Y8. Ultrathin and Layered Materials](#)

[Y9. Focus Session: Honeycomb and Pyrochlore Lattices](#)
[Y10. Topological Insulators: Band Structures Theory](#)
[Y11. Statistical Mechanics of Social Systems](#)
[Y12. Spectroscopy on Topological Insulators](#)
[Y16. Focus Session: Carbon Nanotubes, Graphene, & Related Materials: Chemical Properties and Sensing](#)
[Y17. Focus Session: Graphene Devices: Optical and Opto-electronics](#)
[Y18. Invited Session: New Approaches to the Non-Equilibrium Quantum Many-Body Problem](#)
[Y19. Invited Session: Pictures From the Murk - Real Information from Complex Imaging Datasets](#)
[Y20. Invited Session: Spin Accumulation: Experiment and Theory Behind the Controversy](#)
[Y21. Vanadium Oxides I](#)
[Y22. Focus Session: Carbon Nanotubes: Optical, Mechanical, Magnetic & Other Properties](#)
[Y23. Focus Session: Petascale Science and Beyond: Applications and Opportunities in Materials Science and Chemistry III](#)
[Y25. Superconductivity in Cuprates \(mostly\): Theory II](#)
[Y26. Surfaces, Interfaces, Colloids and Catalysis I](#)
[Y27. Superconductivity and Spin Orbit Coupling](#)
[Y28. Focus Session: Spin-Hall Effect III](#)
[Y29. Focus Session: Disordered and Glassy Magnets](#)
[Y31. Focus Session: Spin Chains II: Mostly \$S = 1/2\$](#)
[Y32. Focus Session: Magnetic Oxide Thin Films and Heterostructures: Oxide Films](#)
[Y34. Focus Session: Materials for Electrochemical Energy Storage](#)
[Y35. Collective Modes and Topological Defects in Bose-Einstein Condensates](#)
[Y36. New Developments in Atomic, Molecular, and Optical Physics](#)
[Y39. Superconducting Cavities and Resonators](#)
[Y41. Focus Session: Biopolymers I: Biohybrids, Biointerfaces, and Modeling](#)
[Y42. Theory and Modeling of Diblock Copolymers and Blends](#)
[Y43. Focus Session: Fluids Under Confinement, Colloids and Liquid Crystals](#)
[Y44. Focus Session: Jamming in Granular Media II](#)
[Y45. Focus Session: Granular Materials and Continuum Descriptions of Discrete Media III](#)
[Y46. Invited Session: Novel Approaches to Understanding the Behavior of Self-Propelled Particles](#)
[Y47. Multi-cellular Processes and Development](#)
[Y49. Focus Session: Yielding of Colloidal Crystals, Glasses, and Other Soft Materials](#)
[Y51. Invited Session: Origin and Manifestations of Electronic Nematicity in Iron-Based Superconductors](#)
[Y52. Invited Session: Geometrical Properties of Quantum Hall Fluids](#)
[Y53. Invited Session: Cuprate Pseudogap, Charge Density Wave and Pair Density Wave Session Z](#)
[Z1. Focus Session: Graphene - Multilayer and Interfacial Effect](#)
[Z2. Focus Session: Beyond Graphene - Devices II](#)
[Z3. Invited Session: Thermodynamics of Information Processing](#)
[Z4. Physics of Batteries, Supercapacitors and Fuel Cells](#)
[Z5. Focus Session: Competing Order and ARPES in Fe-Based Superconductors](#)
[Z7. Insulators: ARPES and Other Spectroscopies](#)
[Z10. Topological Insulators - General Theory](#)
[Z16. Focus Session: Graphene - Growth](#)
[Z18. Invited Session: Development of Computational Techniques for Accelerated Materials Development](#)
[Z19. Invited Session: Shear Thickening of Dense Suspensions](#)
[Z20. Invited Session: Physics of Entanglements](#)

[Z21. Vanadium Oxides II](#)
[Z22. Focus Session: Carbon Nanotubes, Graphene, & Related Materials](#)
[Z23. General Physics](#)
[Z24. Quantum Many-Body Systems and Methods II](#)
[Z25. Hubbard and Other Models: Theory](#)
[Z26. Surfaces, Interfaces, Colloids and Catalysis II](#)
[Z28. Focus Session: Kagome Antiferromagnets II](#)
[Z29. Cooperative Phenomena In Magnetism II](#)
[Z30. Focus Session: Frontiers in Magnetism II](#)
[Z31. Focus Session: Spin-Dependent Phenomena in Semiconductors: Topological Insulators and Spin Hall Effect](#)
[Z32. Focus Session: Strongly Correlated Oxide Systems](#)
[Z34. Hydrogen Production, Storage, Delivery](#)
[Z36. Focus Session: Non-equilibrium Dynamics in Quantum Systems](#)
[Z39. Focus Session: Superconducting Qubits and Junctions](#)
[Z41. Focus Session: Biopolymers II: Phase Behavior, Rheology, and Mechanics](#)
[Z42. Theory and Modeling of Polymer Nanocomposites, Interfaces, and Surfaces](#)
[Z43. Focus Session: Fluids Under Confinement, Instabilities](#)
[Z44. Focus Session: Jamming in Granular Media III](#)
[Z45. Porous Media, Fibers, and Flow](#)
[Z46. Invited Session: Mechanical Interactions and Pattern Formation in Multicellular Systems](#)
[Z47. Physics of Genome Organization](#)
[Z49. Focus Session: Self-Phoretic Colloids and Active Emulsions II](#)
[Z50. Membranes, Micelles and Vesicles](#)
[Z51. Invited Session: FeSe/Oxide Interface Superconductivity](#)
[Z53. Invited Session: Thermal Transport: Modelling and Ab Initio Calculations](#)