

FOR ITS 100TH BIRTHDAY, APS PLANS A BIG BASH IN ATLANTA



ATLANTA CONVENTION AND VISITORS BUREAU

Since its inception in 1899, the American Physical Society has grown from 61 to some 41 000 members. To celebrate not only the increase in its membership but the spectacular advances in the discipline during its first century, the society plans its biggest meeting ever, to be held on 20–26 March at the Georgia World Congress Center and the Westin Peachtree Plaza Hotel in Atlanta. The American Association of Physics Teachers is a cosponsor of the meeting.

The physics normally covered in the APS March and APS/AAPT April meetings and in several other separate divisional meetings will be incorporated into a single expanded technical program, likely to draw 8000–10 000 attendees. Overlaid on the traditional technical sessions will be special exhibits, receptions, plenary talks and banquets celebrating the history of physics; the impact of physics on society, technology and culture; and the promise of future accomplishments. To involve the larger Atlanta commu-

nity—especially its young people—APS has also planned a physics festival, featuring demonstrations, lectures and exhibits around the city.

The first of many centennial events will be the opening of a special Nobel Discoveries Exhibit in the congress center on Saturday, 20 March, from 1:30–3 pm. The exhibit will highlight the impact of discoveries that have won Nobel Prizes; it will be open for the duration of the centennial.

The rest of Saturday's program will focus on the international physics community. Physics leaders from around the world will be in town to attend a meeting of the International Union of Pure and Applied Physics (IUPAP), which ends on Saturday morning. Saturday afternoon, from 3 to 6 pm, APS will sponsor a special symposium on international science cooperation. The speakers will be Predhman Kaw (Institute for Plasma Research in Gujarat, India), Luciano Maiani (director general of CERN), Jan Nilsson (of the Knut and Alice Wallenberg Foundation in

Stockholm, Sweden), Tadahiro Sekimoto (counselor and member of the board of directors of the NEC Corp in Tokyo, Japan), and Cylon Gonçalves da Silva (director general of the National Synchrotron Light Laboratory in Campinas, São Paulo, Brazil).

Following the symposium, there will be an international reception and banquet honoring representatives of physical societies from many nations, from 7 to 10 pm at the Westin Hotel. The reception and banquet are open to everyone who purchases a ticket.

Scheduled for the following morning, Sunday, 21 March, are a number of concurrent roundtables on such issues as international security and electronic publishing.

The scientific meeting will officially begin on Sunday afternoon with an opening centennial session and address by D. Allan Bromley (Yale University) from 1 to 1:45 pm, followed at 2 pm by the first of roughly 800 technical sessions. In addition to the invited and contributed sessions on current research, the

units of APS have organized a series of 34 centennial sessions, at which speakers will survey the highlights and preview the future of certain fields (see the accompanying schedules of centennial and invited sessions).

Sunday will be capped off by a gala at Atlanta's Fernbank Museum of Natural History from 6:30 to 10 pm; tickets are available from APS. The gala will include a buffet dinner, music for dancing, entertainment unique to physics and continuous showings of the IMAX film, "Cosmic Voyages."

Monday morning's program will open at 8:30 am with a plenary keynote address, which APS has asked Vice President Gore to deliver. Immediately following, from 10:15 am to 12:30 pm, will be a panel discussion, with the participation of past Presidential science advisers.

From 4 to 6 pm on both Monday and Tuesday, 22 and 23 March, APS will hold special centennial plenary

symposia. The featured speakers will be Steven Weinberg (University of Texas at Austin), talking about the physics of the very big and very small; Harold Varmus (director of the National Institutes of Health), discussing the impact of physics on medicine and biology; Joel Birnbaum (Hewlett-Packard Laboratories), speaking about physics and the information revolution; Mary L. Good (Venture Capital), commenting on physics and technology; Richard Smalley (Rice University), talking about physics and materials; and Martin Klein (Yale University), reflecting on physics and the American culture.

On the social side, APS will host a welcome reception from 6:30 to 8 pm on Monday in the public space at the congress center. The following evening, from 6 to 8:30 pm, there will be alumni reunions sponsored by a large number of academic departments and national laboratories. Senior and retired members of APS can attend a

special buffet breakfast from 7:30 to 9 on Tuesday morning. And any students attending the meeting are invited to mingle and partake of a complimentary lunch from 12:30 to 2 pm on Wednesday.

On Wednesday, at a session from 5:15 to 7 pm, APS will honor some 35 individuals with prizes, awards and medals for their various contributions (see the prize story on page 77 of this issue). Following the awards presentations, Andrew Sessler (University of California, Berkeley) will deliver his address as the retiring APS president.

Besides the talks in the scientific sessions, there will opportunities to learn about certain topics in greater depth. The APS division of high polymer physics will be offering a short course on macromolecular physics in biology and bioengineering on Saturday, from 8 am to 5 pm and on Sunday, from 8 am to 1 pm. On Sunday, 21 March, from 9 am to 1 pm, APS will

Sessions with Invited Speakers

Sunday, 21 March

afternoon

* GIMS/FHP: 20th Century Developments in Instrumentation and Measurements. *Bement, Bagley, Moore, Hudson, Matey.*

* FPS: Science Policy for the New Millennium. *Alpern, Lieberman, Ehlers, Colwell, Mark.*

* CSWP: Breakthroughs of Women in Physics. *Conwell, Levett, Sengers, Krebs, Gaillard, Hanson.*

GGR: Gravitational Experiments I. *Everitt.*

DPF: CP Violation and Rare Processes. *Arisaka, Tschirhart, Iconomidou-Fayard, Wise.*

DAP: Gamma Ray Bursts. *Fishman, van Paradijs, Woosley, Wijers, Hartmann.*

DCP: Irving Langmuir Prize and Earle K. Plyler Prize Talks. *Kivelson, Pratt.*

DMP/DCMP: Magnetoresistance I: Theory I. *Varma.*

DMP: Combinatorial Synthesis. *Xiang, van Dover, Matsumoto.*

DCMP: Theory of the Interacting Electron Gas. *Brosens.*

DCMP: Thermodynamic and Elastic Properties. *Wentzovitch.*

DMP/GMAG: Fundamental Issues in Magnetoelectronics. *Prinz, Aushalom, Freeman, Himpel, Chien.*

DBP/FIAP: Biological and Organic Materials and Applications. *Millis.*

DCMP: Spin-Polarized and Half-Metallic Materials. *Sun, Bratkovsky, Osofsky, Fabian, Pickett.*

DCMP: Sedimentation and Particulate Dispersion. *Guazzelli, Janosi, Segre, Tong, Levine.*

DCMP: Magnetic and Elastic Properties of CMR Manganites. *Millis, Cheong, Booth, Rosenkranz, Loquet.*

Monday, 22 March

morning

* Centennial Keynote Address. *Gore.*

* DNP: The Atomic Nucleus: A 20th Century Journey into the Microcosm of Matter. *Mottelson, Isgur, Koonin, Freedman.*

* DHPP: Milestones in Polymer Physics. *De Gennes, Grassley, Kramer, Lotz.*

DPF: Theoretical Developments in Particle Physics. *Murayama, Cvetic, Kakushadze, Lykken.*

AAPT: Strategies that Enhance Student Learning: Building on the Past, Looking to the Future. *Zollman, Heller, Patterson, Van Heuvelen.*

DAMOP: Rydberg States and Coherent Control. *Pillet, Robicheaux, Dunning, Jones, Uzer.*

DPP/SHER: Nonlinear Dynamics of Complex Plasma Systems. *Dawson, Diamond, Morrison, Newman.*

DAP: The Cosmological Constants. *Carroll, Tegmark, Strauss, Kennicutt, Huchra.*

DAMOP: Thesis Prize in AMO Physics. *Wiese, Nöckel, Esry, Andrews, Fatemi.*

DMP: Surfaces and Ultrathin Films I: Structure and Dynamics. *Baddorf.*

DMP/DCMP: Magnetoresistance II: Electronic and Magnetic Order of CMR Materials. *Sinha.*

DMP: Ferroelectrics I: Theoretical Modeling of Ferroelectrics. *Bellaiche.*

DMP: Optics of Semiconductor Dots I: Theory and Spectroscopy. *Zunger.*

DMP/DCMP: Materials Theory: Electronic Structure I: Density Functional Theory. *Gyorffy.*

DCP: Fundamentals for Interstellar Chemistry. *Vidali, Oka, Tielens.*

DMP: Wide Bandgap Semiconductors I: Structure and Defects. *Feenstra.*

DMP: Thermoelectrics I: Bi Nanowires, Polytellurides, and Novel Materials. *Dresselhaus.*

DMP/DCMP: Vortices in Superconductors I: Vortex Pinning: Mostly Theory. *Blatter.*

DBP: Coulomb Complexities in Biomolecular Systems. *Gelbart, Parsegian, Gronbeck-Jensen.*

DBP: Biomedical Investigations with Laser Polarized Noble Gas NMR. *Pines, Walsworth, Swanson, Johnson.*

DCMP: Stripe Order and Magnetism in Lanthanum Nickelates. *Blumberg, Hammel, Chen, Wochner.*

DCMP/DMP: Davisson-Germer, McGroddy, and Adler Joint Prize Session. *Anthony, Louie, Feldman, Haller.*

GMAG: Magnetic Macroscopic Quantum Tunneling. *Chudnovsky.*

DCMP: Spin and Pseudospin in the Quantum Hall Regime. *Pellegrini, Eriksson, Das Sarma, Turberfield.*

GMAG: Exchange Biasing in Magnetic Films and Multi-Layers. *Stiles.*

afternoon

* DPF: The Search for the Ultimate Structure of Matter. *Lederman, Lee, Richter, Witten.*

* DCP: The History of Chemical Physics. *Herschbach, Marcus, Rice, Ross.*

GGR: Instrumentation for Gravitational Wave Detection. *Shoemaker, Fritschel, Camp, Gustafson, Saulson.*

CSWP/DNP/FHP: Women and Men Inside the Atom: A Historical Look. *McGradyne, Sachs, M. Goldhaber, A. S. Goldhaber.*

DNP: Relativistic Heavy Ion Minisymposium A: Stopping and Energy Density. *Huang.*

DAMOP/DLS: Laser Action in Microlasers with Chaotic Resonators. *Gmachl, Chang.*

AAPT: Media Then and Now. *Fuller, Beichner, Novak, Patterson, Christian.*

FIP: Physics Cooperation in Cold War and Post-Cold War Eras.

sponsor tutorials on five topics: magnetic force microscopy, cellular automata simulations with Mathematica, the physics of cold atoms, career choices in industrial and applied physics and key concepts in surface science.

Two international gatherings will run in parallel with the APS Centennial. The Conference on Computational Physics (CCP'99), sponsored by IUPAP and the APS division of computational physics, will run from 23–26 March. The International Sherwood Fusion Theory Conference, in collaboration with the APS division of plasma physics, will run from 22–24 March.

During the Centennial, APS will offer a job center, operated by the American Institute of Physics. The job center will be open from 9 am to 5 pm on Monday, 22 March, through Thursday, 25 March. In addition, there will be two career and professional development workshops on Sunday, 21 March. One workshop, to be held from

8 am to 1 pm, will focus on the management problems of the technical person in a leadership role. The other, scheduled for 6:30–9 pm, will be a career workshop led by Peter Fiske (Lawrence Livermore National Laboratory), who has written a career guide for scientists.

With the larger number of APS units participating in this meeting, the annual trade show and exhibit will be bigger and busier than ever. The show is an important place for attendees to gather information on physics-related products and services, books and periodicals. This year, it will include a special APS Units Expo—exhibits put together by each of the divisions, forums and topical groups of APS—as well as some exhibits sponsored by national laboratories, Federal agencies and centennial corporate sponsors. The show will be open in the congress center from 10 am to 5 pm on Monday, from 1 to 8 pm on Tuesday and from

10 am to 3 pm on Wednesday.

Whereas the scientific program is directed toward physicists, APS also has planned a series of events under the umbrella of a physics festival, aimed at students and the general public in Atlanta. There will be a series of lectures at such public venues as the Rialto and Fox Theaters on the physics of everyday topics: dance, rainbows, brass instruments, Star Trek and even beer. Stephen Hawking (Cambridge University) will give a public lecture on Wednesday night. There will also be special symposia at local universities on physics-related topics (science communications and the history of black scientists, for example); cultural events such as a display of scientific images by photographer Felice Frankel at Fernbank and a microscope photography show at the Atlanta College of Art; and physics demonstrations at local schools, the SciTrek Museum and other area venues.

Birman, Pines, Gor'kov, Chang, Yang.
FPS: Science, Junk Science, and Pseudoscience. *Park, Holt, Randi.*
DAMOP: Rotation Sensors. *Kasevich, Packard, Stedman.*
DMP: Surfaces and Ultrathin Films II: Electronic Properties. *Dowben.*
DMP/DCMP: Magnetic Nanostructures II: Magnetic Coupling. *Guntherodt.*
DFD: Fluctuation Induced Forces. *Kardar, Garcia, Krech, Law.*
DMP/DCOMP: Materials Theory, Modeling and Simulations I: Bridging Length and Time Scales. *Ortiz.*
FIAP: Physicists at Startups. *Downing, Bjorklund, MacVicar, Rowell, Wilde.*
DMP: Optics of Semiconductor Dots II: Single Dots. *Samuelson.*
DMP: Materials Theory: Electronic Structure II: Metals and Alloys. *Dederichs.*
DHPP/DBP: Polymers in Biological Materials and Interfaces. *Stupp, Saltzman, Safinya, Hammer.*
DCMP: Near Field Microscopy. *Grober.*
DCP: Protein and Retinal Proteins. *Karplus, Mathies, Atkinson.*
DMP: Wide Bandgap Semiconductors II: Electronic Properties. *Mattila.*
DMP: Thermoelectrics II: Thermionics and Superlattices. *Mahan.*
DCMP: Optical Properties of High-*T_c* Superconductors I. *Schuller.*
DMP/DCMP: Vortices in Superconductors II: Vortex Correlations in Layered Superconductors. *Morozov.*
DCMP: Hexa Borides and Charge Density Waves. *Ott.*
DBP: Photobiology and Medical Physics. *Mycek, Wyatt.*

DCMP: Phase Separation in Layered Manganites. *Perring, Moreo, Salamon, Egami.*
DCMP: Nanoscale Energy Localization in Nonlinear Systems. *Bishop, Sievers, Page, Peyrard.*
DCMP: Novel Applications of Ground State Algorithms. *Mousseau, Middleton, Heiko, Alava.*
* Centennial Plenary Session I. *Weinberg, Varmus, Birnbaum.*

Tuesday, 23 March

morning

* GPMFC/DAMOP: Atomic Clocks in Science and Technology. *Ramsey, Backer, Herring, Wineland.*
* DAP: Unsolved Problems in Astrophysics. *Marcy, Blandford, Gaiser, Turner.*
* DFD/GSNP: Spontaneous Pattern Formation in Fluids. *Gollub, Swinney, Ahlers, Hohenberg.*
DNP: Nuclear Structure, Symmetry and Beams of Short-Lived Nuclei. *Nazarewicz, Rehm, Glasmacher, Behr.*
DPF: B and Charm Quark Physics. *Sharma, Kroll, Selen, Wiss.*
FED: Education Outreach from Physics Departments and Laboratories. *Ramsell, Haase, Bardeen, Berg.*
AAPT: Professional Benefits of Joint APS/AAPT Membership. *Becchetti, Krane, Mazur.*
DPP/SHER: Nonlinear Relaxation Processes in Plasmas. *Hayashi, Catto, Fitzpatrick, Sovinec, Shay.*
DMP: Organic Electronic Materials I: Charge Injection and

Centennial sessions are printed in red. Abbreviations preceding each entry denote the sponsoring organization (o) or, in the case of APS units, the division (d), committee (c), forum (f) or topical group (t):

AAPT: American Association of Physics Teachers (o)
COM: Minorities (c)
CWSP: Status of Women in Physics (c)
DAMOP: Atomic, Molecular and Optical Physics (d)
DAP: Astrophysics (d)
DBP: Biophysics (d)
DCOMP: Computational Physics (d)
DCMP: Condensed Matter Physics (d)
DCP: Chemical Physics (d)
DFD: Fluid Dynamics (d)
DHPP: High Polymer Physics (d)
DLS: Laser Science (d)
DMP: Material Physics (d)

DNP: Nuclear Physics (d)
DPB: Particles and Beams (d)
DPF: Particles and Fields (d)
DPP: Plasma Physics (d)
FED: Education (f)
FHP: History of Physics (f)
FIAP: Industrial and Applied Physics (f)
FIP: International Physics (f)
FPS: Physics and Society (f)
GFB: Few-Body Systems and Multiparticle Dynamics (t)
GGR: Gravitation (t)
GIMS: Instrument and Measurement Science (t)
GMAG: Magnetism and Its Applications (t)
GPMFC: Precision Measurement and Fundamental Constants (t)
GSNP: Statistical and Nonlinear Physics (t)
SPS: Society of Physics Students (o)

Transport. *Parris*.

DMP/DCMP: Fullerenes and Nanotubes I. *de Heer*.

DMP: Surfaces and Ultrathin Films III: Correlated Electron Systems. *Ortega, Hellberg*.

DMP/DCMP: Magnetic Nanostructures III: Micromagnetic Imaging and Modeling. *Proksch*.

DMP/DCMP: Magnetoresistance IV: Pyrochlores, Isotope Effect and Specific Heat of Manganites. *Subramanian*.

DMP: Ferroelectrics II: Relaxor Ferroelectric and Polar Glasses. *Samara*.

DMP: Optics of Semiconductor Dots III: Spectroscopy and Theory. *Whaley*.

DMP: Materials Theory: Electronic Structure III: Large and Multiscale Simulations at Surfaces and Interfaces. *Scheffler, Morris*.

DHPP: Challenges and Opportunities in Polymer Physics. *Bates, Jelinski, Milner, Muthukumar, Tirrell, Wiltzius*.

DCMP: THz-Spectroscopy and Ultra Fast Optics. *Unterrainer*.

DCMP: II-VI and Sulfide Thin Films. *Studenikin*.

GIMS: New Optical Communications Systems. *Thomas, Prucnal, Kohnke, Chernikov, Hu*.

DCP: The Largest Interstellar Molecules: Spectroscopy and Detection. *Thaddeus, Hudgins, Bauschlicher*.

DCP: Ligated Heme Proteins. *Friedman, Anfinsen, Champion, Zheng*.

DMP: Wide Bandgap Semiconductors III: Growth Issues. *Ludwig, Samarth*.

DMP: Thermoelectrics III: Skutterudites, Clathrates, and Novel Materials. *Sharp*.

DCMP: Andreev Reflection. *Eom*.

DMP/DCMP: Vortices in Superconductors III: Flux Pinning and Dynamics. *Diaz*.

DBP: Dynamics of DNA and Other Microscopic Rods. *Mezard, Nelson, Powers, Heslot*.

DBP: Noisy Subthreshold Oscillations in Neuronal Systems I. *Braun*.

DCMP: Electrons on Helium. *Platzman, Dahm, Dykman, Lea*.

DCMP: Novel Nanostructures. *Hirose, Rubio, Drndic, Mizel*.

DCMP/DMP: New Advances in Cuprate Single Crystal Growth. *Guptasarma, Erb, Karpinski, Dabrowski*.

DCOMP/CCP99: Frontiers of Computing. *Van Houweling, Giles, Reis, Hall*.

* GIMS/GPMFC: The Natural Standards. *Layer, Vanier, von Klitzing, Kautz*.

* GGR: Einstein's Legacy: Probing Nature's Experiments in Gravitational Physics. *Will, Kirshner, Spergel, Thorne*.

* FIP: The Impact of Immigration on US Physics. *Frauenfelder, Pinczuk, Chu, Altshuler*.

DNP: Nuclear Structure and Nuclear Interaction. *Arnold, Steele, Savage, Miskimen*.

DPF: Panofsky and Sakurai Prize Session. *Thorndike, Vainshtein, Zakharov, Shifman*.

CSWP/DAP: Patching the Pipeline: Issues and Actions. *Welther, Urry, McNeil, Fox*.

DAMOP: Quantum Information. *Zurek, Mabuchi, Kwiat, Weihs*.

DAMOP: AMO Physics for Astronomy in the New Millennium. *Kahn, Dalgarno, van Dishoeck, Leckrone*.

DMP/DCMP: Fullerenes and Nanotubes II. *Schonenberger*.

DMP/DCMP: Magnetoresistance V: Theory II. *Littlewood*.

DMP: Materials Theory, Modeling and Simulations II: Friction, Lubrication and Surface Forces. *Gao*.

FIAP: Physics in the Petroleum Industry. *Rothman, Black, Kleinberg, Webb III, Cernansky*.

DMP: Optics of Semiconductor Dots IV: Dynamics. *Steel, Solomon*.

DMP: Materials Theory: Electronic Structure IV: Complex Materials. *Singh*.

DCMP: Magnetic Resonance and Magnetic Force Microscopy. *Sidles*.

DCP: The Largest Interstellar Molecules—Experimental Frontiers. *Saykally, Bierbaum, Maier*.

DCP: Antenna and Reaction Centers. *Hochstrasser, Boxer, Holten*.

DMP: Wide Bandgap Semiconductors IV: Doping and Compensation. *Neumark, Rapcewicz*.

DMP: Laser Processing I: Novel Applications. *Stuke, Sands*.

DCMP: Nuclear Resonance Techniques. *Gorny*.

DCMP: Magnetism and Superconductivity: Theory. *Blagoev*.

DBP: Entropy, Information, and Temporal Precision in Neurons. *Brenner, Berry*.

DCMP: Spin Polarization of Ferromagnets with Andreev. *Byers, Nadgorny, van de Veerdonk, Buhrman*.

1998 Nobel Prize Winners. *Pople, Kohn, Laughlin, Stormer*.

DCMP: Electrodynamics of High Temperature Superconductors. *Orenstein, Mihailovic, Bonn, Hayden*.

DCOMP/CCP99: Computers and Education. *Warner, Gould, Heermann, Christian*.

DCOMP/CCP99: Computational Fluid Dynamics. *Kim, Brady, Tryggvason, Smith*.

afternoon

* FIAP: Industrial Research: Past, Present, and Future. *Brinkman, Edelheit, Horn, Ressler, Casimir*.

* FHP: Physics in the 20th Century: World War II, Accelerators, and the Rise of High Energy Physics. *Panofsky, Seidel, Galison, Weinberg*.

* DCP: Environmental and Medical Applications of Chemical Physics. *Lauterbur, Gratton, Johnston, Rowland*.

DNP: Some Recent Developments in Nuclear Physics. *Macchiavelli, Moeller, Koehler, Gratta*.

GGR: Astrophysics and Gravitational Wave Sources I. *Bender*.

DNP: Minisymposium on the Structure of the Proton I. *Ji*.

DNP: Relativistic Heavy Ion Minisymposium D: Predictions for RHIC I. *Pang*.

AAPT: Old and New Ways of Looking at Graduate Education. *Breinig, Berz, Hall, Czujko*.

DAMOP: High Intensity Laser/Matter Interactions. *Gaarde, Gibson, Schmidt, Muller*.

GSNP/DPP: Nonlinear Dynamics in Fluids and Plasmas. *Tel, Driscoll, Dimonte, Sreenivasan*.

FPS: Physicists as Concerned Citizens: Working from Outside the System. *Holton, Casper, Morrison, Rotblat*.

DAMOP: Cold Collisions. *Gribble, Stwalley, Orzel, Gallagher*.

DMP/DCMP: Fullerenes and Nanotubes III. *Brouet*.

DMP: Surfaces and Ultrathin Films V: Magnetism. *Hibma*.

DMP/DCMP: Magnetoresistance VI: Orbital and Phase Separation Effects. *Saboungi*.

FIAP: Physics of the Silicon Bond in Electronic Materials. *Pernisz, Stucky, Banaszak, Holl, Miller, Taylor*.

DMP: Ferroelectrics III: Ferroelectric Relaxor and Mixed Ferroelectrics. *Pirc*.

DMP: Optics of Semiconductor Dots V: NSOM and Microphotoluminescence. *Burrato*.

SPS: Society of Physics Students Undergraduate Research. *Warner*.

GIMS: Keithley Award Session: *Foner, Soulen, Stewart, Mandelis*.

DCMP: Metal Clusters and Semiconductor Dots. *Wilcoxon*.

DMP: Laser Processing II: Mechanisms and Matrix Effects. *Garrison, Kawasaki*.

DCMP: Metal Insulator Transition in 2D I. *Pudalov*.

DBP: Noisy, Subthreshold in Neuronal Systems II. *Gilmore*.

DCMP: Energetic Modification of Growth and Processing/Structure of II-VI Surfaces. *Jacobson*.

DCMP: Biomaterials and Supramolecular Materials. *Marko, Salditt, Bruinsma, Podgornik*.

DCMP: Striped Phases in High- T_c Superconductors. *Tranquada, Buchner, Emery, White*.

GMAG: Nonlinear Magnetic Excitations: Solitons, Instabilities and Chaos. *Patton*.

DCMP: Superconductivity in Strontium Ruthenate. *Luke, Forgan, Imai, Agterberg*.

DCOMP/CCP99: Large-Scale Computational Science. *Meiron, Rosner*.

* Centennial Plenary Session II. *Good, Smalley, Klein*.

Wednesday, 24 March

morning

* DLS/DAMOP: The Impact of the Laser on Contemporary Physics. *Tounes, Bloembergen, Gordon, Phillips, Murnane*.

* DCMP/DMP/GSNP: Statistical and Multidisciplinary Physics. *Nagel, Austin, Nelson*.

* COM: From Particles to Atoms and Galaxies: Physics in All Sizes and by All People. *Jackson, Nieto, Walker II, Garcia*.

DAP: Technological Advances as a Driver of Progress in Astrophysics. *Trimble, Cohen, Kellermann, Arnett, Gursky*.

DBP/DNP/DPB: Biological Science Using Accelerators and Synchrotron Radiation. *Moffat, Kuhn, Bertsch, Kraft, Knezovich*.

DPF: Frontiers in Particle Physics. *Burchat, Caldwell, Van Kooten, Morse*.

AAPT: Honoring Lillian McDermott. *Shaffer, Laws, Redish, Viennot, Vokos, Heron*.

DPP/SHER: Plasma Turbulence and MHD Phenomena. *Kruger, Sugiyama, McClements, Snyder, Zeiler, Moyer*.

FHP: I. I. Rabi: Physicist and Citizen. *Ramsey, Herschbach, Kleppner, Perl, Lane, Bethe*.

DMP/DCMP: Fullerenes and Nanotubes IV. *White*.

DMP/DCMP: Magnetic Nanostructures VI: GMR. *Butler*.

DMP/DCMP: Magnetoresistance VII: Layered Compounds. *Kimura*.

DFD: Nonlinear Phenomena and Pattern Formation I. *Egolf*.

DMP: Materials Theory, Modeling and Simulations III: Interfaces, Reactions and Oxides. *Andreoni*.

FIAP: Applications of Advanced Optical Techniques. *Bueck, Rosencwaig, Woollam, Tam, Sincerbos*.

DMP: Optics of Semiconductor Dots VI: Heterostructures. *Mews, Williams.*
 DMP: Materials Theory: Electronic Structure V: Metals and Alloys. *Drchal.*
 DHPP: High Polymer Prize Symposium. *Han, McKenna, Amis, Hashimoto, Akcasu.*
 DCMF: Electronic Structure Theory: From Methods to Molecules and Materials I. *Handy, Frisch, Morokuma, Engels.*
 DCP: Femtosecond Real Time Studies of Molecular Reaction Dynamics in Condensed Systems. *Voehringer, Pollak, Ciccotti.*
 DCMF: Ballistic Transport and Quantum Point Contacts. *Lorke.*
 DMP: Wide Bandgap Semiconductors VI: Devices and Technology. *Brown.*
 DMP: Laser Processing III: Wide Bandgap Materials. *Vispute, Herman.*
 DCMF: Penetration Depth and Pairing Symmetry. *Carrington.*
 DBP: Protein Structure. *Schulten, Eaton.*
 DCMF: New Topics in Superfluid ^3He . *Sauls, Packard, Parpia, Barker, Saunders.*
 DCMF: New Phenomenology for Non-Fermi Liquid Behavior at a Quantum Critical Point. *Castro, Neto, Grosche, Kotliar, Schroder, MacLaughlin.*
 DCMF: Vortices in High Temperature Superconductors. *Krusin-Elbaum, Indenbom, Safar, Kogan.*
 AIP/SPS: Society of Physics Students Undergraduate Research. *Steinke, Smullin, Kinkhabwala.*
 DCOMP/CCP99: Spanning the Size Scales in Materials Phenomena. *Joannopoulos, Vashishta, Needleman, Broughton.*
 * **DLS: Applications of Lasers and New Physics.** *Chu, Fujimoto, Knox, Wilson, Zeilinger.*
 * **DPF/DNP/DAP: Neutrinos.** *Totsuka, Davis, Burrows, Haxton.*
 * **FED: Research and Innovation in Physics Education: Towards the 21st Century.** *Tobias, Holbrow, Holcomb, Redish, McDermott.*
 Fundamentals of Statistical and Field Theory: Onsager and Heine-
 man Prize Session. *Yang, Wu, McCoy, Zamolodchikov.*
 DAMOP: Negative Ion Spectroscopy. *Bowen, Ayotte, Okumura, Haugen, Leopold.*
 FPS: Arms Control and National Security. *Zimmerman, Panofsky, Garwin, Sullivan.*
 DMP/DCMP: Fullerenes and Nanotubes V. *Iwasa.*
 DMP: Surfaces and Ultrathin Films VII: Growth and Transport. *Arnason.*
 DCMF/DMP: Magnetic Nanostructures VII: Magnetic Nanocrystals and Clusters. *Murray.*
 DMP/DCMP: Magnetoresistance VIII: Non-Manganites. *von Molnar.*
 DMP: Ferroelectrics IV: Ferroelectric Thin Films and Interfaces I. *Ducharme.*
 DMP: Optics of Semiconductor Dots VII: Dot Arrays. *Forchel, Brus.*
 DMP: Mechanical Properties II: Characterization of Dislocations. *Hughes, Levine.*
 DCP: Cluster Spectroscopy and Dynamics I. *Klemperer, Duncan, Rao.*
 DCP: Collisions, Solvation, and Reactions at Gas-Liquid Interfaces. *Nathanson, Apkarian, Ladanyi.*
 DMP: Wide Bandgap Semiconductors VII: SiC and Diamond. *Brandes.*
 DMP: Laser Processing IV: Defects in Films. *Narayan, Horwitz.*
 DCMF: Optical Properties of Superconductors III. *Little.*
 DBP: Noise-Mediated Spatiotemporal Phenomena in Biology and Physics. *Collins, Loecher.*
 DCMF: Instabilities and Transitions in Granular Media. *Losert, Schiffer, Pouliquen, Olafsen, Parker.*
 DCMF: Morphology Evolution of Ion-Eroded Surfaces and Spectroscopy with Sub-Wavelength Resolution Using Solid Immersion Lenses. *Murty, Erlebacher, Cuerno, Poweleit, Ghislain.*
 GMAG: Magnetic Macroscopic Quantum Tunneling and Fast Magnetization Dynamics. *Barbara.*
 DCMF: Vortex Imaging. *Tonomura, Grier, López, Marchetti, Pardo.*
 DCOMP/CCP99: Computational Investigations of Complex Fluids I. *Frenkel, Koplik, Lookman.*

afternoon

* **DAMOP/GPMFC: Precision Measurements in Atomic Physics: A Window into Fundamental Interactions.** *Commins, Gabrielse, Hansch, Wieman.*
 * **FHP: Physics in the 20th Century: The Revolution: Quantum Mechanics and Relativity.** *Norton, Cassidy, Rigden, Hoddeson.*
 * **FIAP/FPS: History of Physics in National Defense.** *Bethe, Drell, Wheelon, Townes, Robinson, Fetter.*
 GFB/DNP: From Fields to Few-Body Systems. *Adkins, Perry, van Kolck, Phillips, Wiringa.*
 DNP: Minisymposium E: Solar Neutrinos I. *Elliot.*
 DNP: Relativistic Heavy Ion Minisymposium F: Antibaryons. *Wang.*

FED: Physics and the Arts. *Rossing, Hartmann, Jeong, Laws, Chiaverina, Edge.*
 DPP/DAP: Plasma Dynamics in Space and Astrophysics. *Papadopoulos, Biskamp, Yamada, Title, Hawley, Arons.*
 DMP/DCMP: Fullerenes and Nanotubes VI. *Bende.*
 DMP: Surfaces and Ultrathin Films VIII: Buried Interfaces. *Demkov.*
 DMP/DCMP: Magnetic Nanostructures VIII: Transport in Low-Dimensional Magnetic Structures. *Ansermet.*
 DFD: Bose-Einstein Condensation. *Rokhsar.*
 DMP: Materials Theory, Modeling and Simulations IV: Surfaces and Clusters. *Marzari.*
 FIAP: Industrial Applications of Optical Spectroscopy I. *Rosenthal.*
 DMP/DCOMP: Materials Theory: Electronic Structure VI: Large Scale Methods. *Pask.*
 DHPP: Dillon Medal Symposium. *Mayer.*
 DCMF: Liquid Crystals: Structure. *Mach.*
 DCP: Electronic Structure Theory: From Methods to Molecules and Materials II. *Pitzer, Yarkony, Scuseria.*
 DCP/DCMP: Cluster Spectroscopy and Dynamics II. *Castleman, Lineberger, Desfrancois.*
 DCMF: Arrays, Clusters, Films. *Thio.*
 DMP: Laser Processing V: Surface Modifications. *Lowndes, Fitz-Gerald.*
 DCMF: Metal Surfaces: Adsorbates. *Nienhaus.*
 DCMF: Dipolar Composite Fermions. *Read, Murthy, Simon, Lee, Pasquier.*
 DCMF: Scanned-Probe Microscopy of Semiconductor Nanostructures. *Kleiman, Goldberg, DeWolf, Whitman, Williams.*
 GMAG: Spin Polarized Tunneling. *Jansen, Maekawa, Slonczewski, Tedrow, Wiesendanger.*
 DCMF: Progress and Obstacles in the Realization of Electrically Pumped Organic Lasers. *Conwell, Davidov, Dodabalapur, Forrest.*
 DCOMP/CCP99: Computational Investigations of the Foundations of Statistical Mechanics. *Zia, Eyink, Suzuki, Gallavotti, Plastino.*
 DCOMP/CCP99: QCD I. *Creutz, Gottlieb, Lepage, Karsch.*
 DCOMP/CCP99: Computational Astrophysics in the Extreme. *Lehner, Porter, Hillebrandt, Svesty, Norman.*

Thursday, 25 March

morning

* **DMP/GMAG: The History of Magnetism.** *Graham, Foner, Wolf, Fisher, Gruenberg.*
 * **GFB: The Three-Body Problem in Atomic, Molecular, and Nuclear Physics.** *Friar, Reinhardt, Truhlar, Burgdoerfer, Tornow.*
 * **DPP: Plasma Physics in the 20th Century: From Fundamental Physics to Applications.** *Bollinger, O'Neil, Kennel, Krue, Prager, Lieberman.*
 DAP/DNP/DPF: Great Observatories. *Beckwith, Kniffen, Sokolsky, Robertson, Barwick.*
 DPF: Standard Model. *Tung, Muller, Heintz, Clare.*
 DNP: Relativistic Heavy Ion Minisymposium G: Leptons and Exotics. *Nagle.*
 FPS: FPS Awards Session. *Dyson, Simpson.*
 DAMOP: Bose-Einstein Condensation. *Anderson, Greytak, Cornell, Zoller.*
 DAMOP: Recent Developments in Ion/Atom Collisions. *Cederquist, Beiersdorfer, Olson, Schultz.*
 DMP/DCMP: Fullerenes and Nanotubes VII. *Erwin.*
 DMP: Materials Theory, Modeling and Simulations V: Epitaxial Growth, Ordering Diffusion and Surface Processing. *Tu.*
 FIAP/GMAG: Industrial Applications of Optical Spectroscopy II. *Nelson.*
 GIMS: Spectroscopy in High Magnetic Fields. *Crooker, Miura, Musfeldt.*
 DCP: Electronic Structure Theory: From Methods to Molecules and Materials III. *Sherrill, Stanton.*
 DCP: Liquid Structure and Spectroscopy. *Tokmakoff, Barbara, Hynes.*
 DCMF: Coulomb-Blockade Behavior. *Narimanov.*
 DMP: Nanocrystals and Arrays I: Electronic Transport. *Whetten.*
 DMP: Laser Processing VI: Fast and Novel Lasers. *Pronko, Dylla.*
 DBP: Contrasting New Theories of Protein Folding with Experiments. *Dyer, Onuchic, Jennings, Brooks III, Baker.*
 DCMF: Growth and Disorder of Macromolecular Crystals. *Chernov, Malkin, Thorne, Vekilov, Frenkel.*
 DCMF: New Surface Physics with the STM. *Stipe, Crommie, Besenbacher, Pai, Wiesendanger.*
 GMAG: Magnetism in Soft Matter I. *Odenbach.*
 DCMF: Electronic Structure of Vortices in High- T_c Cuprates. *Taillefer, Fischer, Franz, Zasadzinski, Loram.*
 DCOMP/CCP99: Polymers. *Grest, Kröger, Müller-Plathe, Stevens, Gusev.*

DCOMP/CCP99: Quantum Computing. *Cory, Cirac, Kane, Berman.*
 DCOMP/CCP99: QCD II. *Sharpe, Weise, Mawhinney, Rebbi.*
 DCOMP/CCP99: The Dynamical Interaction of Magnetic Fields and Matter. *Parker, Glatzmaier, Bondeson, Vu, Mikic.*
 * DCOMP: Electronic Structure and Semiconductors. *Sham, Capasso, Girvin, Webb, Altshuler.*
 * DPB: Science with Accelerators, Storage Rings, and Light Sources. *Courant, Sessler, Shen, Taylor.*
 GGR: Progress in the Theory of Gravitation. *Wald, Teukolsky, Horowitz.*
 DNP: Precision Measurements of Form Factors. *Perdrisat, Petratos, Beise, Mack.*
 DAP: Apker and Goeppert-Mayer Award Session. *Bell, Ghez.*
 FPS: Physics, Policy, Energy, and the Environment. *Bodansky, Rosenfeld, Socolow, Hafemeister.*
 GPMFC/DAMOP: DAMOP Prize Session. *Miller, Raizen, Lamoreaux, Msezane, D'Urso.*
 DMP: Organic Electronic Materials VIII: Fluorescent Properties. *Rothberg.*
 DMP/DCMP: Fullerenes and Nanotubes VIII. *Kuzmany.*
 DMP/DCMP: Magnetic Nanostructures X: Exchange Bias. *Kiwi.*
 DMP/DCMP: Magnetoresistance XI: Geometrical Effect and CMR Thin Films. *Solin.*
 FIAP: Magnetism in Technology. *Coe, Kryder, Parkin, T. Zhu, J.-G. Zhu.*
 DMP: Materials Theory: Electronic Structure VIII: Magnetism. *Niu, Capelle.*
 DHPP: Defects in Polymers and Soft Materials. *Schick, Winey, Navard, Kamien, Keller.*
 DCOMP: Quantum Hall Effect V: Charge Density Waves and Wigner Crystals. *Lilly.*
 DCP: Cluster Spectroscopy and Dynamics III. *Dagdigian, Lester, Heaven.*
 DCP: Complex Liquids. *Liu, Maroncelli, Schmuttenmaer.*
 DMP: Nanocrystals and Arrays II: Silicon and Devices. *Fauchet.*
 DMP: Novel Dielectric Semiconductor Systems I. *Chisholm.*
 DBP: Glial-Cells, Brain Waves and Neurons: A New Perspective in Brain Research. *Cornell-Bell, Showalter, Charles, Jung, Sontheimer.*
 DCOMP: Growth and Defects of GaN and Its Alloys. *Speck, Northrup, Moustakas, Headrick, Freitas.*
 DCOMP: Many-Body Interactions in Quantum Dots. *Cronenwett, Davidovic, Bockrath, Alhassid, Blanter.*
 DCOMP: Condensation Energy and Transport in High T_c Superconductors. *Moler, Hardy, Basov, Hwang, Chakravarty.*
 DCOMP/CCP99: Computational Investigations of Complex Fluids II. *M. L. Klein, W. Klein, Jasnow, Yoshida, Yeomans.*

afternoon

* DBP: Energy Landscapes in Physics. *Frauenfelder, Sherrington, Wolynes, Prusiner.*
 * GSNP: Dynamics Since Poincare. *Feigenbaum, Yorke, Wisdom, Ruelle.*
 DNP: DNP Prize Session and Business Meeting. *Hawker, Salpeter, Pandharipande.*
 DPB/DPF: Scientific Impact of High Energy Physics Facilities. *Seeman, Rubin, Marriner, Keil, Palmer.*
 DPP/SHER: The Quest for Controlled Fusion. *Rosenbluth, Freidberg, Hammett, Burrell, Cordey, Maue.*
 DAMOP: Recent Advances in Scattering of Electrons by Atoms and Molecules. *McKoy, Read, Bartschat, Buckman.*
 DAMOP: Optical Lattices and Light Force Manipulation. *Rolston, Weiss, Prentiss.*
 DMP/DCMP: Fullerenes and Nanotubes IX. *Bonard.*
 DMP/GIMS: Positron Spectroscopy I: Defects in Semiconductors. *Mascher.*
 DCOMP: Structural States and Dynamics in Glasses. *Allen, Agladze.*
 DMP: Materials Theory, Modeling and Simulations VI: Stability, Phases, Defects, and Interactions. *Chadi.*
 FIAP: Micromagnetics. *Fredkin, Chantrell, Lengsfeld, Fidler, Scheinfein.*
 DMP: Fundamentals of Heteroepitaxy II: III-V Semiconductors. *Tersoff.*
 FIAP/DHPP: Polymers for Displays. *Doane, Bunning, Drzaic, Scott, Kumar.*
 DCP: Electronic Structure Theory: From Methods to Molecules and Materials IV. *Ahlich, Crauford, Davidson.*
 DCP: Cluster Spectroscopy and Dynamics IV. *Johnson, Coe, Zwier.*
 DMP: Nanocrystals and Arrays III: Metals. *El-Sayed.*
 DMP: Spontaneous Ordering in Semiconductor Alloys I. *Suzuki, Kozhevnikov.*
 DCOMP: Advanced Dielectric-Silicon Interfaces. *Chabal, Young, Car, McKee, Lucovsky.*
 DCOMP: Structure and Transport in Carbon Nanotubes. *Avouris,*

de Heer, Johnson, Dai, Hone.

DCMP: Pseudogaps and the Anomalous Fermi States of the Cuprates. *Campuzano, Renner, Boebinger, Tremblay, Fisher.*
 DCOMP/CCP99: Strongly Correlated Electrons. *Koch, Guerrero, Ulmke, Zhang, Sandro.*
 DCOMP/CCP99/DCMP: Implementing Quantum Computers. *Chuang, Loss, Schön, Imamoglu.*
 DCOMP/CCP99: Computational Investigations of the Foundations of Statistical Mechanics II. *Stauffer, Herrmann, Binder, Alexander, Wang.*

Friday, 26 March

morning

* DCOMP: The Impact of Computing on Physics. *Orszag, Moniz, Ostriker, Cohen.*
 * DCOMP/DMP: Quantum Many-Body Phenomena. *Scalapino, Birgeneau, Osheroff, Fisk, Coleman.*
 DPP/SHER: The Dynamics of Plasma Under Extreme Conditions. *Mori, Remington, Bodner, Matzen, DeSilva, Merlino.*
 DMP/DCMP: Fullerenes and Nanotubes X. *Bernholc.*
 DMP/GIMS: Positron Spectroscopy II: Internal Surfaces in Thin Films. *Rodbell.*
 DMP/DCMP: Magnetic Nanostructures XII: Spin Dependent Tunneling. *MacDonald.*
 DMP/DCMP: Magnetoresistance XIII: T_c Variation by Strain and Composition in Manganites. *Tokura.*
 FIAP: Terahertz Emission and Low-Dimensional Quantum Well Systems. *Gornik.*
 DMP: Ferroelectrics IV: Ferroelectric Thin Films and Interfaces II. *Zafar.*
 DMP: Materials Theory: Electronic Structure X: Non-Crystalline Materials and Clusters. *Kulkarni.*
 DCP: Electronic Structure Theory: From Methods to Molecules and Materials V. *Roos, Carsky, Bartlett.*
 DCP: Liquid State Dynamics. *Berne, Rossky, Stratt.*
 DMP: Nanocrystals and Arrays IV: Nonlinear Optics and Dynamics. *Vallee, Bigot.*
 DMP/DCMP: Vortices in Superconductors XI: Vortex Pinning By Periodic Arrays. *Hoffmann.*
 DBP: Structural Characterization of Macromolecules. *Shlesinger, Rao.*
 DCOMP: Heterogeneities in Supercooled Liquids. *Böhmer, Glotzer, Israeloff, Colmenero, Schmidt-Rohr.*
 DCOMP: Submicron Patterning. *Marohn, Mirkkin, McClelland, Rogers, Sohn.*
 DCOMP: Kinetics and Thermodynamics in Crystal Growth. *De Yoreo, Brune, Liu, Palmore, Jesser.*
 DMP: Organic Electronic Materials XI: Photovoltaic and Photoconduction Devices. *Carter.*
 DMP/DCMP: Fullerenes and Nanotubes XI. *Falvo.*
 DMP: Mechanical Properties III: Multiscale Modeling. *Moriarty.*
 DCOMP: Quantum Hall Effect VII: Phase Transitions. *Raikh.*
 DCP: Electronic Structure Theory: From Methods to Molecules and Materials VI. *Friesner, Balasubramanian, Olsen.*
 DCP: Cluster Spectroscopy and Dynamics V. *Neumark, Compton, Wang.*
 DMP: Nanocrystals and Arrays V: Interfacial Interactions. *Henderson.*
 DMP: Spontaneous Ordering in Semiconductor Alloys II. *Weimer, Zhang.*
 DBP: Lipid Membranes. *Blum.*
 DBP: Bioinformatics and Scaling Laws. *Buiatti, G. West, Allegrini, B. J. West.*
 DCOMP: Hydrodynamics in Complex Fluids. *Rutgers, Ecke, Morris, Bechhoefer, Wu.*
 DCOMP/DLS: Optical Control of Electronics in Quantum Structures. *Wegener, Shah, Sherwin, Bar-Joseph, Citrin.*
 DCOMP: Dynamic Phenomena in Surface Overlayers From Fluctuation Measurements. *Conrad, Tringides, Tromp, Ala-Nissila, Toennies.*

afternoon

DMP: Organic Electronic Materials XII: Optical Cavities and Lasers. *Lidzey.*
 DMP/GIMS: Positron Spectroscopy IV: New Techniques. *Howell.*
 DMP: Mechanical Properties IV: Dislocations, Faults, and Shear. *Mills.*
 DMP: Fundamentals of Heteroepitaxy IV: Oxide and Organic Materials. *Yang.*
 DCOMP: Beyond Density Functional Theory. *Sahni.*
 DCOMP: Glass Transition and Glasses II. *Goldbart.*
 DMP: Nanocrystals and Arrays VI: Electron Transfer and Carrier Relaxation. *Lian.* ■