APS Makes Its Way To San Jose In March

The American Physical Society has chosen San Jose, California, as the site for its March meeting, which runs from 20–24 March. The Fairmont Hotel will serve as the headquarters for the meeting, and most of the sessions will be held in the San Jose Convention Center; the division of high polymer physics will convene at the Holiday Inn Park Center, and the divisions of materials physics and computational physics will have some of their sessions in the Fairmont Hotel.

The convention will be every bit as large as those in the past, with some 4400 contributed presentations and 575 invited talks. The talks will deal with such topics as condensed matter physics, materials physics, high polymer physics, chemical physics, biological physics, instruments and measurement science and fluid dynamics. In addition to the more specialized divisional symposia, there will be a number of general interest sessions.

Participants were able to submit their abstracts electronically for the first time this year, and over 70% took advantage of that opportunity. The meeting program will be available on the APS Home Page. It can be accessed on the World Wide Web through http: //aps.org or by ftp at aps.org. If using ftp, log in as "anonymous" and change to directory /pub/baps/march_95.

On the weekend that precedes the meeting, the APS high polymer physics division is offering a short course on the application of microscopies in polymer physics. On Sunday, 19 March, APS is sponsoring a number of half-day tutorials: recent advances in lasers; an introduction to data parallel computing; nanostructures and nanotechnology; cleaning the environment; GeSi—from materials research to devices and technology; the science and technologies of thin films and innovations; and computer simulations with Mathematica. Also scheduled for Sunday is a workshop on promoting the qualitative understanding of physics ideas among elementary school teachers, using examples from light.

For those in the job market, APS and the American Institute of Physics will offer two career development workshops in the Fairmont Hotel on Sunday from 9 am to 12 noon and from 1 to 4 pm. In addition AIP will operate a job placement center Monday through Wednesday from 9 am to 5 pm and Thursday from 9 am to noon. The center will be located in the registration area on the concourse level of the convention center.

On the outreach side, APS will conduct a high-school physics teachers' day on Thursday. Also, AIP will conduct a hands-on science program for sixth graders from the San Jose area on Wednesday morning as part of its program Students to Explore and Experience Physics.

Cryogenic equipment, superconducting magnets, UHV analyzers and lots of other new products will be on display at the APS show, arranged by AIP. The show hours will be: Tuesday from noon to 6 pm, Wednesday from 10 am to 5 pm and Thursday from 10 am to 3 pm.

A reception will be held on Monday evening at 6:30 pm at the San Jose Convention Center. It will be followed, at 7:30 pm, by the ceremonial session, featuring the presentation of APS awards and prizes.

Ten individuals will be honored at the meeting. The Herbert P. Broida Prize will be given to **Ahmed Zewail,** the Linus Pauling Professor of Chemical Physics at Caltech, for "his seminal and outstanding contributions to chemical physics, pioneering work on the development and studies of molecular dynamics with ultrafast lasers, novel multiple-pulse optical coherence techniques and ultrafast electron diffraction, and for his breakthrough development of the field of femtochemistry, which opened up worldwide research in theory and experiment on dynamics at the atomic-scale time resolution." **Rolf Landauer** of the IBM Thomas J. Watson Research Center in Yorktown Heights, New York, will receive the Oliver E. Buckley Prize for "his invention of the scattering theory approach to the analysis and modeling of electronic transport."

Max G. Lagally, the E. W. Mueller Professor of Materials Science at the University of Wisconsin, Madison, will be honored with the Davisson–Germer Prize for his "seminal studies of structural disorder at surfaces and far-reaching contributions to understanding the fundamental mechanisms of epitaxy." The High Polymer Physics Prize will go to **Jacob Klein,** a professor in the materials and inter-

faces department of the Weizmann Institute of Science, in Rehovot, Israel, for "his pioneering experiments on diffusion and interfacial structure of polymers."

APS will also honor **George Benedek,** the Alfred H. Caspary Professor of Physics and Biological Physics at MIT, with the Irving Langmuir Prize for "his outstanding invention of dynamic light-scattering spectroscopy and its fundamental applications to critical phenomena, macromolecular transport and ocular diseases." The 1995 Onsager Prize will be given to **Michael E. Fisher,** Regents Professor and Distinguished University Professor in the Institute for Physical Science and Technology at the University of Maryland. Fisher is being cited for "his numerous and seminal contributions to statistical mechanics, including but not restricted to the theory of phase transitions and critical phenomena, scaling laws, critical exponents, finite size effects and the application of the renormalization group to many of the above problems."

The George E. Pake Prize will go to **James C. McGroddy,** Senior Vice President for Research at the IBM Thomas J. Watson Research Center, for "his scientific creativity, sound judgment and inspiring leadership during his career as a researcher, manager of science and technology, and technology leader and strategist in the IBM Corporation." The cita-

Sessions with Invited Speakers

Monday, 20 March

Morning

New probes of the high-temperature superconductors' pairing state. *Kirtley, Mathai, Dynes, Valls, Klemm*
New studies of Isaac Newton's works. *Shapiro, Chandrasekhar, Nauenberg*
Glassy dynamics. *Menon, Leslie-Pelecky, Angell, Kivelson, Anderson*
Strongly correlated metals. *Tokura, Thomas, Robinson, Bucher, Maple*
Semiconductor optoelectronic devices. *Coleman, Dutta, Miller, Campbell, Pollack*
Tribology and scanning force microscopy of complex interfaces. *Marti, Lieber*
Dissipative tunneling in quantum systems. *Golding, Andrei, Goodkind, Ao, Lea*
Metal superlattices, other layered systems. *Mitzi*
Electronic structure theory I. *Smith*
Theory of materials I: Large-scale approaches. *Wang*
Diamonds and related materials I: Diamond growth and characterization. *Jamison*
Laser processing of materials I: Fundamentals. *Schawlow, Haglund*
Conducting polymers I: Photoexcitations I. *Vardeny*
Computer simulation and theory I. *Douglas*
High-T_c theory. *Abrikosov, Pines, Chakravarty*
Chaos in ballistic microstructures. *Berry, Baranger, Keller, Weiss, Simons*
Conducting polymers. *Monkman, Stegeman*
Finite-time singularities in fluids. *Kadanoff, Caflisch, Bhattacharjee, Kerr, Pelz*
Technology: Physics and policy issues of electric battery vehicles. *Stempel, Ovshinsky, Schafer*
Complexity at interfaces: Recent advances in scanning tunneling microscopy. *Sautet, Poirier, Wilson*
Metal–insulator transition in 2-D systems. *Dahm*
Spin-density waves and magnetic order. *Clark*
Theory of materials II: Interatomic potentials and tight binding. *Abraham*
Silicon and silicon-based clusters: Structure, stability and optical response. *Jackson*
Fullerenes I: Structure and dynamics. *Meingast*
Laser processing of materials II: Pulsed laser deposition. *Pronko*
Conducting polymers II: Photoexcitations II and NLO. *Yan*
Surfaces, interfaces and thin film I. *Composto*

Afternoon

Supersolids and other exotic phases. *Fischer, Kapitulnik, Zimanyi*
Raman scattering from cuprate superconductors. *Klein, Hackl*
Future directions of the semiconductor industry: The role of physics. *Seidel, Fuller, Tasch, Bartelink*
Topological defects in liquid crystals. *Kleman, Lubensky, Toner, Lavrentovich, Yurke*
Revolutionary superconductive sensors. *Clarke, Paik, Lukens, Dunlap*
Prizes and awards of APS: Chemical physics. *Zewail, Kinsey, Benedek*
Ground states and domain walls in spin glasses. *Stein, Gingras*
Can culture change? *Sadoulet, Barnes, Shutt, Stubbs*
Electronic structure of high-T_c. *Andersen*
Liquid crystals: Dynamics and ferroelectrics. *Goulian*
Metal–non-metal transition in low-dimensional systems. *Carini*
Instrumentation: Mostly optical. *Wright*
Magnetic heterostructures: GMR-metallic II. *Bass*
Theory of materials III: Phase diagrams and transformations. *Sugino, Chen*
Diamond and related materials II: Diamond growth and characterization. *McCauley*
Fullerenes II: Doped materials A. *Gunnarsson, Zettl*
Reactive surfaces in plasma processing. *Ibbotson, Adams, Fisher, Engel, Coltrin*
Conducting polymers III: Theory. *Rice*
Surfaces, interfaces and thin film II. *Koberstein*

Tuesday, 21 March

Morning

$\nu = {}^1/_2$ quantum Hall effect. *Ioffe, Tsui, Wilczek*
Local optical spectroscopy: From molecules. *Yoo, Levy, Grober*
Cryogenic elementary particle detectors. *Sadoulet, Cabrera, Nahum*
Pattern formation in micro-organism colonies. *Shapiro, Ben-Jacob, Budrene, Levine, Steinbock*
Physics-based modeling of microelectronic, mechanical and thermofluidic systems. *Verdonckt-Vandebroek, Dutton, Pinto, Senturia*
Complexity at interfaces: New developments in scanning force microscopy. *Rugar, Ohnesorge*
Thermal transport. *Moler*
Collisions below 1 K: Collisions of optically cooled and trapped atoms. *Hulet, Williams, Rolston*
Carbon clusters: Assemblies, metcars and fullerenes analogs. *Bernier*
Fullerenes III: Doped materials B. *Palstra*
High Polymer Physics Prize symposium. *Klein, Ball, Pincus, Fetters, Tirrel*
Six decades of condensed matter physics: Origins and trends. *Herring, Anderson, Cohen, Hamann, Geballe*
Optical properties of excited state of conjugated polymers. *Shinar, Brédas*
Polarization: A manifestation of quantum phase. *King-Smith, Resta*
Point defect dynamics in silicon. *Poate, Jones, Plummer*
X rays in condensed matter. *Magnussen, Arthur*
Excitations of Mott insulators. *Wells, Bulut*
Physics of reduced dimensionality. *Mochena, Richardson, Ravelo, Encinosa, Williams, Akinwande*
Complexity at interfaces: Atomic-scale properties and engineering of novel interfaces—Theory and simulation. *Musgrave, Mailhiot, Haydock*
Physics education: An international perspective. *Jossem, Rodriguez, Subbaswamy, Olenick, Pearson*
Flux lattice imaging. *Bishop*
Electronic structure methods. *Burke*
Collisions below 1 K: Cold collisions in atomic beams. *Weiner, Vredenbregt, Gentry*
Magnetic heterostructures: Exchange coupling II. *Edwards*
Theory of materials IV: Oxides and related materials. *Ceder*

tion goes on to say that McGroddy "has redefined the role of a world-class industrial research laboratory for the 21st century." **James L. Kinsey,** Dean and D. R. Bullard–Welch Foundation Professor of Science at Rice University, will garner the Earl K. Plyler Prize. The citation praises "his outstanding contribution to molecular spectroscopy, in particular, his studies of the spectroscopy of molecules in their process of falling apart, dynamics of molecules by stimulated emission pumping, and the significant advance of Fourier-transform Doppler spectroscopy."

Marc Kastner, the Donner Professor of Science in the physics department and director of the Center for Materials Science and Engineering at MIT, will receive the David Adler Lectureship Award. Kastner, who is cited for "his pioneering work on amorphous semiconductors, on narrow-band oxides with emphasis on both the magnetic and transport properties of high-T_c superconductors and, most recently, on nanoscale semiconductor structures," will present his award lecture Wednesday morning. The John H. Dillon Medal will be presented to **Stephen Z. D. Cheng,** associate professor of polymer science at the University of Akron, Ohio, for "his outstanding productivity in research on semicrystalline, liquid crystalline and high-performance polymers.

Stress and epitaxy: Electronic and optical properties. *Petroff*
Fullereness IV: Doped materials C. *Mihaly, Mele*
Laser processing of materials III: Applications. *Duley, Tam*
Tribology: Theory of interfaces and atomic force microscopy. *Hirano*
Phase transitions I. *Tran-Cong*

Afternoon

High-precision spectroscopy of confined excitons. *Shah, Bigot, Bar-Ad*
Composite fermions. *Read, Wu*
Fluctuations and high-T_c superconductors. *Mook, Walstedt*
Structured fluids in flow. *Balsara, Marques*
Magnetic flux in superconductors. *Tonomura, Kaiser, Guntherodt*
Prizes and awards of APS. *Landauer, Fisher, McGroddy*
New perspectives in the quantum Hall regimes. *Sohn, Barrett, Simon, Goldman, Bayot*
Quantum fluids in aerogel. *Parpai, Halperin, Muzikar, Mulders, Oja*
Microsensors. *Kaiser, Ezekiel, Harrison, White*
Complexity at interfaces: Theory and simulation. *Graves, Tosatti*
The status and future of data storage. *Kryder, Weller, Gibson, Hesselink*
Local tunneling (STM, etc.). *Black*
Superconductivity in T–J model. *Dagotto*
Collisions below 1 K: Finite-size boson condensates. *Huisken, Whaley, Burnett, Kasevich*
Magnetic heterostructures: Magnetic circular dichroism. *Hillebrecht*
Theory of materials V: Defects in oxides and semiconductors. *Heine*
Stress and epitaxy: Relaxation and alloying. *Feenstra*
Tribology: Adhesion of small particles, friction and deformation of absorbates. *Robbins*
Dillon Medal symposium. *Cheng*
Industrial research in polymer physics I. *Eusebi, Wirth, Galvin, Wolfe, Pratt, Yoon*
Magnetic properties in superconductors. *Soininen, Sauls*
Site visits to physics departments to improve the climate for women. *Franz, Dresselhaus, Clark*

Wednesday, 22 March

Morning

Stacked Josephson junction arrays. *Müller, Ustinov*
Fundamentals of growth: Davisson–Germer Prize lecture. *Lagally, Himpsel, Zuo, Ratsch, Lanczycki*
Photoemission from metallic quantum wells and multilayers. *Chiang, Horn*
Protein folding: Theory. *Wolynes, Socci, Dill, Thirumalai, Levitt*
Advances in computational materials science. *Krakauer, Arias, Mehl, Mitas, Troullier Jr*
Complexity at interfaces: Nuclear magnetic resonance at interfaces. *Slichter, Driehuys, Chmelka*
Adler Prize symposium: Magnetic effects in layered superconductors. *Kastner*
Hg-based cuprates. *Gupta*
Quantum chaos. *Sridhar*
Magnetic heterostructures: Spin-polarized electronic structures. *Johnson*
Theory of clusters: Fragmentation, assembly, reactions and response. *Tománek*
Fullerenes V: Nanotubes A. *Iijima*
X-ray and neutron scattering I: Inelastic. *Kao, Endoh*
Avalanches I: Experiments on noise and avalanches. *Marley*
Block copolymers. *Stadler*
Neutron scattering from polymers I. *McConnelly, Dadmun*
Industrial research in polymer physics II. *Haynes, Feng, Fruitwala, Lovinger, O'Reilly, Bubeck*
Double quantum wells. *Simmons, Tamborena*
C-axis coupling in high-temperature superconductors. *Cooper, Basov, Uchida*
Bscco in the mixed state. *Zeldov, de la Cruz*
Electron scattering in mesoscopic systems. *Petrashov, de Vegvar, Nazarov, Ralph, Hershfield*
Macroscopic quantum phenomena in magnetic systems. *Giordano, Stamp, Garg, Wernsdorfer, Loss*
Protein folding: Experiment. *Jonas, Eaton, Wand, Dyer*
Liquid crystal displays. *Kosaka, Drevillon, Kmetz, Steemers*
Complexity at interfaces: Surface dynamics via time-resolved spectroscopy. *Harris, Miller, Ho*
Jobs and education. *Czujko, Aylesworth, Dresselhaus*
Colloids I. *Mason*
Comparison of reaction dynamics in vapor and condensed phases I. *Apkarian, Syage, Vaida*
Biological spectroscopy and microscopy. *Ritter*
Magnetic heterostructures: Micromagnetic imaging. *Zhu*
Theory of materials VI: Ferroelectrics and related materials. *Zhong*
Stress and epitaxy: Stress-induced roughening. *Roland*
X-ray and neutron scattering II: SAS and surfaces. *Keimer*
Avalanches II: Experiments on fracture and avalanches. *Rice*

Afternoon

Vortices in superconductors. *Vinokur, Krusin-Elbaum, Bhattacharya*
Heavy-fermion superconductors. *Joynt, Jansen, Norman, Luke, Taillefer*
Photonic band gap materials and applications. *Özbay, Villeneuve, Brown*
Non-Fermi liquid behavior in 1D. *Gruner, Schulz, Giamarchi, Fujimori*
Dynamics of the heart. *Glass, Ditto, Kaplan, Winfree*
Conduction electron scattering at surfaces. *Tobin, Krim, Persson, Williams, Hebard*
Complexity at interfaces: Nonlinear spectroscopy of complex interfaces. *Shen, Peremans, Richter*
Changing work styles of physicists in industry. *Brinkman, Shreve, Fisher, Orlowski, Nelson*
Defects in semiconductors: Mostly wide band gap. *Johnson*
Interfacial and growth phenomena. *Barabási*
Nanostructured materials, clusters and fine particles. *Ziolo, Hadjipanayis*
Comparison of reaction dynamics in vapor and condensed phases II. *Cukier, Hynes, Martens*
Metal surfaces: Clean and physisorbed. *Wiechert*
Magnetic heterostructures: Itinerant magnetism theory. *Jansen*
Theory of materials VII: Dielectric properties. *Ortiz, Dal Corso*
Nanoclusters: Growth, magnetism and characterization. *Majetich*
Fullerenes VI: Nanotubes B. *Amelinckx*
Noncrystalline materials I: Structure and transport. *Barocchi*
Avalanches III: Avalanches and earthquakes. *Rutledge*
Phase transformations I. *Fultz*
Alternative science: Foolish, fraudulent and phobic. *Randi, Lewis, Park*

Connecting graduate education to teaching needs. *Adelberger, Hiegelke, Heller, McDermott*

Evening

Special symposium on neutron physics—past, present and future. *Shull, Brockhouse, Birgeneau, Rush*

Thursday, 23 March

Morning

Rare-earth–nickel–borocarbide superconductors. *Cava, Sinha, Canfield*
Metal–insulator transition in the integer quantum Hall effect. *Engel, Johnson, Kirk, Wei, Wang*
Defects in wide band gap semiconductors. *Chadi, Han, Franciosi, Glaser, Boguslawski*
Manipulation of single DNA molecules. *Chu, Bensimon, Volkmuth, Zimmermann, Bustamante*
Bosonization of Fermi systems. *Haldane, Castro Neto, Marston, Schmeltzer*
Complexity at interfaces: Surface forces in thin films and particulate systems. *Helm, Chaudhury, Bike*
Trends in scintillators and phosphors. *Blasse, Weber, Pappalardo, Soules*
Applications of artificial neural networks and other artificial intelligence to chemical systems I. *Shelton, Venkatasubramanian, Roppel*
Magnetic heterostructures: Magneto-optics. *Bennemann*
Stress and epitaxy: Structure. *Albrecht*
Noncrystalline materials II: Dynamics. *Mitch*
Phase transformations II. *Thompson, Clapp*
High-T_c superlattices and PBCO. *Suzuki, Fehrenbacher*
Hall dynamics of vortices in high-T_c superconductors. *Samoilov, Clinton, Geshkenbein*
Hysteresis and criticality in disordered nonequilibrium systems. *Dahmen, Adams, Field, Ortín, Shore*
Diffusion, growth and morphology of surfaces. *Feibelman, Khor, Ercolessi, Watson, Held*
Reading the physics in sequence data. *Trifonov, Stanley, Voss, Mandell*
Energy efficiency in buildings. *Schwartz, Levine, Akbari, Goldstein*
Complexity at interfaces: Probing complex interfaces with electrons. *Bartynski, Langell, Van Hove*
Microwave processing of materials. *Oda, Booske, Goldberg, Kriegsmann*
YBCO-related films: Properties. *Yazdani*
Mesoscopic chaos and resonant tunneling. *Efetov*
General fluids. *Löfstedt*
Applications of artificial neural networks and other artificial intelligence to chemical systems II. *Sumpter, Liebovitch*
Quasi-crystals. *Bürgler*
Magnetic heterostructures: Novel magnetic materials. *Ortiz*
Positron applications I: Diffraction and Auger spectroscopy. *Duke*
Fullerenes VII: Thin films. *Hashizume*

Afternoon

Normal-state properties of cuprates. *Batlogg, Xiuguang*
Solid hydrogen at megabar pressure. *Silvera, Hemley, Natoli*
Nonequilibrium intersub-band dynamics: Lasing, harmonic generation and energy relaxation. *Faist, Heyman, Woods, Leburton, Julien*
Physicists working in government policy. *Tsang, Howes, Moore, Londono, Hammer*
Phase coexistence and structures in dipolar fluids. *Martin, Fraden, Liu, Luo, Stevens*
High-temperature superconductor applications in electronics. *Forrester, Withers, Nisenoff, Braginski*
Complexity at interfaces: Recent advances in near-field microscopy. *Barbara, Trautman, Xie, Hochstrasser*
Semiconductor heterostructures: III–V optical properties—experiment. *Buratto*
Phase transitions: Experiments with x rays and neutrons (mainly). *Stephenson*
Magnetic heterostructures: Tunneling and 4f exchange. *Landolt*
Diamonds and related materials VI: Physics of wide band gap semiconductor devices and related issues. *Trew, Gildenblat*
Theory of materials X: Mechanical properties. *Knantha*
Fullerenes VIII: Dynamics and reactivity. *Scuseria*
Noncrystalline materials III: Metallic glasses. *Johnson*
Avalanches VI: Scaling, self-organized criticality and avalanches (theory). *Mehta*
Phase transformations II. *Briber*
Neutron scattering from polymers II. *Ankner, Li*
Sensitive measurements using mechanical resonators. *Greywall, Bocko*

Friday, 24 March

Morning

Biotechnology. *Salmelin, Kawana, Giaever*
Mechanisms for pattern formation. *Warren, Cummins, Cladis, Zimmermann, Swinney*
Strained-layer epitaxy. *Joannopoulos, Urban, Jesson, Pidduck, Legoues*
DNA–ligand interactions. *Dickerson, Lee, Chen, Feigon*
Federal policy initiatives and physics research aspects of sustainable technology. *Lempert, Rosenfeld, Richards, Kartha, Anderson, Kaarsberg*
Complexity at interfaces: X-ray scattering studiens at interfaces. *Song, Safinya, You*
Photoemission. *Shen*
Density functional theory. *Umrigar*
Elemental and compound glasses. *Cappelletti*
Quantum dots and mesoscopic semiconductors. *Leonard*
Phonons: Spectroscopy. *Fahy*
Metal surfaces: Ion interactions. *Goodstein*
Magnetic heterostructures: Epitaxial magnetic films. *Clemens*
Positron applications II: Momentum densities and defect spectroscopy. *Nieminen*
Fullerenes IX: Dynamics and reactivity. *Brühwiler*
High dielectric constant materials I: Bulk properties. *Cross*
Proximity tunneling in cuprate superconductors. *Durusoy, Char*
High-frequency electrodynamics of type-II superconductors. *Orenstein, Tsui*
Studies of ballistic electron emission microscopy. *Sajoto, Bell, Ludeke, von Känel, Prietsch*
Defect dynamics on semiconductor surfaces. *Ebert, Weimer, Weber, Chen, Moison*
Electron tunneling in biology. *Okamura, Regan, Therien, Beratan, Schmickler*
Visualization and simulation. *Wickham-Jones, Bryson, Letteri, Belak*
Electronic structure: Alloys. *Muller*
Phonons: Lattice dynamics. *Bickham*
Positron applications III: Defects in semiconductor films and interfaces. *Van Veen*
High dielectric constant materials II: Thin films. *Fork*

Afternoon

Organic electroluminescence for display applications. *Tang, Dodabalapur, Parker*
Aharonov–Casher effects in condensed matter physics. *Mathur, Dresselhaus, Lyanda-Geller, Mooij, Stern*
Highly correlated coupled chains. *Takano, Noack, Barnes, Tsunetsugu, Affleck*
Electron transport in random B fields. *Arovas, Geim, Mancoff, Per, Miller*
Spin glassiness in strongly frustrated antiferromagnetics. *Ramirez, Greedan, Uemura, Tun, Sachdev*
Complexity at interfaces: Molecular beam studies of complex interfaces. *Nahtanson, Sibener, Kay, Rettner*
DCMP: General. *Bunde*
Spin–Peierls systems. *Harris*
Magnetic heterostructures: Magnetic oxides. *Lind* ■