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Visit the DMP Homepage

www.aps.org/units/dmp

Our Homepage on the World Wide Web contains all types of Divisional information, including current and back issues of the DMP Newsletter. Our library of "Images of Materials" brightens up our homepage and provides a visual statement that helps to describe us as a scientific community. Thanks to all of our contributors. Send comments and additional

Len Feldman Wins 1999 Adler Award

Leonard C. Feldman of Vanderbilt University is to receive the 1999 David Adler Lectureship Award. His citation reads:

"For distinguished research and lecturing on ion beam analysis, semiconductor surfaces and thin film growth.

"The award presentation will be made at the 1999 APS March Meeting in Atlanta. Len will present his Adler Lecture at Session EC35.03 on Monday morning March 22, 1999. The title of the talk is RSurfaces, Thin Films, and the Semiconductor RevolutionS. The purpose of the award is to recognize an outstanding contributor to the field of materials physics who is noted for the quality of his/her research, review articles and lecturing. The lectureship was originally endowed in 1988 by contributions from friends of the late Professor David Adler of MIT. Len Feldman will be the twelfth annual recipient of the award.

Thomas R. Anthony and Eugene E. Haller Win McGroddy Prize

The award presentations will be made at the 1999 APS March Meeting in Atlanta. The purpose of the James C. McGroddy Prize is to recognize and encourage outstanding achievement in the science and application of new materials. This shall include the discovery of new classes of materials, the observation of novel phenomena in known materials leading to both fundamentally new applications and scientific insights, and shall also include theoretical and experimental work contributing significantly to the understanding of such phenomena. This newly reinstated prize is endowed by a contribution from IBM. From 1975

contributions to Sam Bader,
DMP Sec./Treas.

to 1994 it was administered as the International
Prize for New Materials.

The citation for Thomas R. Anthony of General
Electric Research and Development Center and for
Eugene E. Haller of the University of California at
Berkeley reads:

"For innovations in growing diamond and
germanium crystals with unprecedented control of
chemical and isotopic purity and perfection, and for
creative leadership and active participation in
worldwide collaborations based on these
extraordinary materials resulting in both
fundamental discoveries and new technological
applications."

Thomas R. Anthony will present a talk at the Joint
Awards Session EC03 on Monday morning March
22, 1999 entitled Isotopic Diamonds and Eugene E.
Haller will talk there on Isotopically Controlled
Semiconductors.

Recruit New DMP Members

Encourage a colleague or friend
to affiliate with DMP. The annual
cost is \$6 added to the regular
APS membership dues. As we
build our membership base, we
increase the visibility of the
materials physics presence as a
vibrant part of APS, and we also
strengthen the impact of our
numerous outreach efforts, such
as to Washington and to related
Societies. Instructions on how to
become a member of DMP (or
any other APS unit) appear on
our homepage, or simply call
(301) 209-3280 with your APS
membership number (from the
mailing label of a recent
publication sent to you) and a
credit card for the \$6/year dues.
Or fax (301) 209-0867 or mail
the information to APS at:

**Accounting Department
The American Physical
Society
One Physics Ellipse
College Park, MD
20740-3844**

New APS Fellows Sponsored by DMP

Bozovic, Ivan
Varian Research Center

For his outstanding contributions to atomic-layer
engineering of cuprate superconductors and other
complex oxides, fabrication of delicate multilayers
and superlattices, and their innovative
spectroscopic characterization.

Car, Roberto
Universite de Geneve

For outstanding contributions to physics, especially
the combination of molecular dynamics with
density functional theory which has proven to be a
powerful method to study atomic-scale dynamics in
molecules and solids.

Farrow, Robin F. C.
IBM Almaden Research Center
For pioneering the development of molecular beam
epitaxy to grow and study epitaxial
semiconductors, metastable phases, dielectrics,
magnetic elements and alloys.

Greene, Joseph E.
University of Illinois
For original contributions to the experimental
development, modeling, and understanding of Si,
Ge, and Si(1-x)Ge(x) atomic-layer epitaxy and

gas-source molecular-beam epitaxy.

Gupta, Arunava

IBM T.J. Watson Research Center

For contributions to the development of pulsed laser deposition techniques, the use of this technique for the production of materials with novel physical properties, and for original contributions to the understanding of nonequilibrium film-growth mechanisms.

LeGoues, Françoise K.

IBM T. J. Watson Research Center

For insightful contributions and creative use of electron microscopy in determining mechanisms of strain relaxation in heteroepitaxial growth of semiconductor thin films.

Sales, Brian Craig

Oak Ridge National Laboratory

For development of important new materials for: (a) the storage of nuclear waste, and (b) the generation of electrical power.

Scheffler, Matthias

Max-Planck-Gesellschaft

For significant contributions to elucidating atomic-scale structures in solids and solid surfaces by first-principles approaches.

Stephens, Peter Wesley

SUNY Stony Brook

For determination of the structure of fullerene materials and elucidation of the relationships between their structures and physical properties.

Zhang, Zhenyu

Oak Ridge National Laboratory

For original and innovative contributions to the understanding of thin-film growth mechanisms and kinetic/dynamical processes at surfaces.

DMP March Meeting Focus Sessions (ordered by sorting category)

The complete Centennial Meeting Program is posted on the web (and a personal Schedule Builder should become available) at: [/meet/CENT99/BAPS/index.cfm](http://meet/CENT99/BAPS/index.cfm)

- 2.9.1** SPONTANEOUS ORDERING IN SEMICONDUCTOR ALLOYS
- 2.9.2** WIDE BANDGAP SEMICONDUCTORS
- 3.9.1** NOVEL DIELECTRIC-SEMICONDUCTOR SYSTEMS

- 4.9.4 ORGANIC ELECTRONIC MATERIALS
- 5.9.1 VORTEX PINNING AND LOSSES IN HIGH TEMPERATURE SUPERCONDUCTORS
- 6.9.4 MAGNETORESISTANCE IN BULK COMPOUNDS
- 7.9.1 COMBINATORIAL SYNTHESIS
- 7.9.2 LASER PROCESSING IN MATERIALS PHYSICS
- 7.9.3 SCIENCE AND APPLICATIONS OF FULLERENES, NANOTUBES, AND RELATED MATERIALS
- 9.9.1 FERROELECTRICS: PHASE TRANSITIONS, PROPERTIES, AND APPLICATIONS
- 13.9.1 FERROELECTRICS: PHASE TRANSITIONS, PROPERTIES, AND APPLICATIONS
- 13.9.2 MAGNETIC NANOSTRUCTURES AND HETEROSTRUCTURES
- 13.9.3 OPTICS OF SEMICONDUCTOR QUANTUM DOTS
- 13.9.4 SEMICONDUCTING AND METALLIC NANOCRYSTALS: FABRICATION, CHARACTERIZATION, AND MODELLING
- 14.9.1 STRUCTURE, ELECTRONIC AND MAGNETIC PROPERTIES OF SURFACES, INTERFACES AND ULTRATHIN FILMS
- 15.9.1 POSITRON SPECTROSCOPY APPLICATIONS
- 16.9.2 THERMOELECTRIC MATERIALS: LOW-DIMENSIONAL EFFECTS AND NOVEL PHENOMENA
- 17.9.1 MATERIALS THEORY: ELECTRONIC STRUCTURE
- 17.9.2 MATERIALS THEORY: MODELLING AND SIMULATIONS
- 17.9.3 MECHANICAL PROPERTIES OF BULK MATERIALS

Elections to the Executive Committee

The present officer list (with expiration dates that follow the March Meeting) includes: (Full addresses appear on the DMP homepage.)

According to our By-laws, at the end of the March APS meeting, the Chair moves to Past Chair, the Chair Elect becomes Chair, and the Vice Chair becomes Chair Elect. All nominees must be DMP members on the June before election. This year we will entertain electronic balloting for the first time, along with mail and fax balloting, as per directives from the APS Council. The motivation is to boost voter turnout. Jim Roberto, Past Chair, has been designated by the Secretary-Treasurer to count the ballots.

Ballots must be received no later than March 8, 1999. Please vote and return your ballot promptly either by mail to Jim Roberto, or FAX (423) 574-4143, or e-mail robertojb@ornl.gov. Include your name on your ballot, and also sign mail or fax ballots.

And the Nominees Are..

The Nominees to fill 1999 vacancies are listed below followed by brief biographical summaries.

Vice Chair

Leonard C. Feldman(Vanderbilt University)
Jeffrey Y. Tsao(Sandia NatUl Labs-Albuquerque)

Secretary-Treasurer

Samuel D. Bader(Argonne National Laboratory)
Gwo-Ching Wang (Rensselaer Polytechnic Institute)

Member-at-Large

Eric Chason (Brown University)
Esther Conwell (University of Rochester)
Joseph E. Greene (University of Illinois, Urbana)
Eugene E. Haller (University of California, Berkeley)
Bennett C. Larson(Oak Ridge National Laboratory)
Jeffrey W. Lynn(NIST, Gaithersburg)

Meet the Candidates: Biographical Summaries/Statements

Vice-Chair

Leonard C. Feldman

Len Feldman is the Stevenson Professor of Physics at Vanderbilt University and a Distinguished Visiting Scientist at Oak Ridge National Laboratory. He joined Vanderbilt in 1996 after a 29 year career in the Research Division of Bell Laboratories, where his last position was Head of the Silicon Materials Research Dept. He also led departments involved in thin film science and ceramic science. In 1970-71 he spent a one-year sabbatical at Aarhus University (Denmark) and has had a variety of teaching assignments in the Materials Science Department at Cornell University and in the Physics Department of Drew University.

Feldman's research interests focus on thin film and interface science, mostly involving semiconductors. Early work focussed on the use of ion beams for surface and interface analysis and modification. Current interests are extended to the study of nanoclusters and cluster fabrication and the organic/inorganic interface. He has published over 250 papers, co-authored 3 books on materials analysis and holds 14 patents on thin film technology. Feldman is a Fellow of the American Physical Society, a Fellow of the American Vacuum Society and been elected to The Royal Danish Academy of Arts and Sciences (1994). He has served as Chair of the Gordon Conferences on Defects in Semiconductors and Chair of the Conference on Particle-Solid Interactions. Journal responsibilities include the Editorial Boards of the Journal of Materials Research, Journal of Vacuum Science and Technology, Surface Science Reports and previous Editor of Applied Surface Science. Other service activities include Advisory Committees for LLNL, Sandia Labs, the Danish Microelectronics Center, and the Institute of Semiconductor Physics

(Frankfurt/Oder). He has been active in the American Physical Society, American Vacuum Society, the Materials Research Society, and is a past secretary/treasurer of the Division of Condensed Matter Physics. Feldman is the recipient of the 1999 Adler Lectureship Award sponsored by DMP and APS.

Statement:

The Division of Materials Physics focuses on two important tasks: 1) serving the scientific and professional needs of DMP members through meetings, oversight of journals and other forms of communication, and 2) publicizing the field of Materials Physics and its importance to the scientific and technological future of the nation. Both missions need the utmost attention. In the first category I would like to see the DMP create a greater activity in the area of the physics of biomaterials. Clearly this is an important future direction and DMP should provide a vehicle to explore the materials physics challenges and opportunities in this forefront area. The second challenge is to articulate the importance of Materials Physics. We need a renewed effort in highlighting our field to the non-scientific community. The field of materials needs visibility, so that an entering undergraduate (and his/her parents) recognizes the discipline as an attractive career path, and a Member of Congress understands that materials science expertise is probably "the most important factor in technological progress", as stated in the popular book *Stuff*, by Ivan Amato. (This popular book is one good example of making our field known to the broader community.) If elected I shall use the DMP "pulpit" to seek new and innovative ways to address this issue.

Jeffrey Y. Tsao

Jeff Tsao was born and raised in Los Angeles, CA, and is a graduate of Stanford University (AB in Mathematics, MS in Electrical Engineering) and Harvard University (MS, PhD in Applied Physics). He is currently (1996-present) manager of the chemical process science department at Sandia National Laboratories. The current focus of his department is the physics and chemistry of materials synthesis, with a special emphasis on chemical vapor deposition of semiconductors. He was previously (1991-1995) manager of the semiconductor materials department, where he was responsible for developing epitaxial materials and processes for high-performance microelectronic and photonic devices and systems. Throughout his management career he has been very active in the development of partnerships with high-technology industry.

His technical interests prior to joining Sandia have included pure mathematics (at Stanford), quantum electronics and spectroscopy (at Harvard under Professor Nicolaas Bloembergen), and laser-induced surface chemical processing (at MIT-Lincoln Lab). After joining Sandia in 1984, his interests have centered on semiconductor epitaxy: at ultra-high velocities during pulsed laser annealing, under the influence of low-energy ion beams, in the presence of lattice mismatches and strain, and as a consequence of surface chemical reactions. Jeff has co-authored over 100 publications and several edited volumes, and is author of the research monograph "Materials Fundamentals of Molecular Beam Epitaxy."

He has been active in the materials and semiconductor physics communities. For the Materials Research Society he has co-chaired two symposia, was general co-chair of the Spring 1995 meeting, serves on the program committee, and coordinates the graduate student award competition. He has also served on the program committees of the American Vacuum Society (Electronic Materials and Processing Division), the

Electronic Materials Conference, and the North American MBE Conference, and he was elected Fellow of the American Physical Society in 1996.

Statement:

Materials physics is a fascinating and core area of modern physics, at the crossroads between science, technology and applications. In this core area, I hope to help continue the DMP's tradition of excellence in technical programs and forums. In addition, I am fascinated by two related trends that have emerged over the past decade, and that are likely to accelerate. The first is the "stratification" of the science and technology communities as academia, industry and national laboratories seek to define their competitive strengths in an environment of decreasing research and development budgets. The second is the "globalization" of the science and technology communities as the economic dominance of the U.S. gives way to a more balanced American (North and South), European and Asian world economy. Both of these trends create market-driven specialization and partnering opportunities for the suppliers and customers of science and technology. One of my priorities will be to understand how these trends can be facilitated so as to create a stronger and more effective national and global science, technology and applications enterprise.

Secretary-Treasurer

Samuel D. Bader

Sam Bader is a senior physicist and group leader of the magnetic films group in the Materials Science Division at Argonne National Laboratory. He received his B.S. (1967) and Ph.D. (1974) from the University of California at Berkeley, where he worked on f-electron superconductivity and magnetism. He joined Argonne's superconductivity group as a post-doc, and in 1977 became a staff member specializing in surface science and thin-film magnetism. He is a participant in the DOE Center for Synthesis and Processing, and in an NSLS undulator beamline team, and has participated in NSF and ONR sponsored materials research initiatives. He serves on the Advisory Board of the International Conference on Magnetism (ICM-2000), and the Executive Committee of the American Vacuum Society's topical group on Magnetic Interfaces and Nanostructures. He has also chaired the AVS publications committee, and served on the American Institute of Physics' publishing policy committee. Bader is a Fellow of the American Physical Society, was a DMP Executive Committee member-at-large (1992-95) and is presently DMP Secretary/Treasurer (1996-99). In 1992 he was co-recipient of the Department of Energy - Basic Energy Sciences Award for Outstanding Achievement in Solid State Physics for work on coupled magnetic layers. In 1994 he received the University of Chicago Award for Distinguished Performance at Argonne. He has co-authored over 200 publications and appears in the ISI 1981-97 "most cited physicists" listing. He is an editor of the Journal of Magnetism and Magnetic Materials and an associate editor of Applied Physics Letters.

Statement:

As Secretary/Treasurer I hope to continue to have the honor to help highlight the outstanding achievements of our community and encourage and empower a growing membership to help shape the destiny of our thriving discipline.

Gwo-Ching Wang

Gwo-Ching Wang is a Professor of Physics at the Rensselaer Polytechnic Institute. She received her B.S. in Physics from Cheng Kung University in Taiwan and Ph.D.

in Materials Science from University of Wisconsin-Madison in 1978, where she worked on phase transitions of chemisorbed overlayers. She then joined the electron physics group at National Bureau of Standards (now NIST), Washington D.C., as a post-doc and worked on spin polarized low energy electrons and its applications in surface magnetism and surface structure determination. In 1980 she became a staff member in the surface physics group, Solid State Division at Oak Ridge National Laboratory. She worked on characterization of surface defects, equilibrium phase transitions, and kinetics of ordering in overlayers. In 1984 she joined Rensselaer Physics Department as an Associate Professor. Her current interests in research are thin film growth far from equilibrium and ultrathin film magnetism. In the area of teaching, she is developing interactive lectures and new courses with hands on experiments. Wang is a Fellow of the American Physical Society and a Fellow of the American Vacuum Society, the recipient of the Nottingham Prize (1978), and the recipient of Rensselaer Early Career Award (1988). Her services in the past include secretary of American Vacuum Society Tennessee Valley Chapter (1981); general committee member (1984-87) of the Physical Electronic Conference (PEC); organizer of the 53rd PEC held at Rensselaer in 1993; panelist for several NSF review panels; and the Director of the NSF sponsored summer Research Experiences for Undergraduates (REU) program at Rensselaer since 1992.

Member-at-Large

Eric H. Chason

Eric Chason has been a professor in the Division of Engineering at Brown University since August, 1998. For the previous 11 years, he was a principal staff member at Sandia National Laboratories in Albuquerque, NM. He received both his B.A. and Ph.D. degrees in Physics from Harvard University, followed by post-doctoral research at Gakushuin University in Tokyo. His research has focused primarily on the evolution of surfaces and thin films during processing. Areas of research include thin film stress evolution, self-organization and islanding in heteroepitaxy, ion-induced roughening instabilities, and nucleation and growth kinetics. A significant component of this work has involved the development of real-time, in-situ diagnostics to enable the study of growth kinetics during processing. His materials-related professional activities include chairing the Fall 1998 MRS meeting, organizing a DMP focused session on nanocrystals, initiating a new Gordon Conference on Materials Processes Far from Equilibrium and organizing three MRS symposia. He also serves on several MRS committees.

Statement:

I think that the major concerns of the DMP should be to 1) present symposia and topical sessions of the highest quality, and 2) to promote education regarding the importance of scientific research. It is a continuing challenge to ensure that our meetings represent the very best, most exciting developments in materials physics. Promoting new topics and recruiting new symposium organizers is one of the most exciting challenges of this position. In addition, we must continually be advocates for scientific research and not assume that science speaks for itself.

Esther Conwell

Esther Conwell received her Ph.D. from the University of Chicago. After teaching for five years at Brooklyn College, she spent a year as a member of the technical staff at Bell Laboratories and then joined GTE Laboratories. She spent 20 years there as a

member of the technical staff, Manager of the Physics Department and Manager of the Electro-optics Program. Moving to Xerox in 1972, she became a Principal Scientist and was promoted to Research Fellow in 1981. She also spent a year as a Visiting Professor at the Ecole Normale Supérieure in Paris and one semester as Abby Rockefeller Mauze Professor at MIT. Her publications include over 200 papers, 4 patents, a monograph in the Solid State Physics series (High Field Transport in Semiconductors) and two books of which she was editor.

She is a member of the National Academy of Sciences, the National Academy of Engineering and the American Academy of Arts and Sciences. She was recently awarded the Edison Prize of the IEEE for her work in semiconductor transport. While still a member of the research labs at Xerox, she was Associate Director of the NSF Center for Photoinduced Charge Transfer (a position she still holds) and an adjunct professor at the University of Rochester. Retired from Xerox in 1998, she has joined the Chemistry Department at the University of Rochester.

Her primary research interests have been 3d semiconductors, particularly transport; integrated optics; quasi-1d organic metals and conducting polymers. Currently she is working on optical properties and transport in conducting polymers.

Included in her service to the APS are a term as secretary-treasurer of the DCMP, twice a member and chairman of the Buckley Prize Committee, two terms as a member of the Editorial Board of Journal of Applied Physics and Applied Physics Letters (1972-74 and 1995-1997). She has several times been co-organizer of DMP focussed sessions on conducting polymers.

Statement:

For our research to have the greatest impact on society, we should strengthen the ties between academe and industry. This can be done by soliciting papers, contributed and invited, from our colleagues in industrial labs, particularly those whose work is not already well represented at the APS. Stronger coordination with FIAP, of which I am also a member, would be helpful in achieving this goal. We should also work toward better coordination between DMP, DCMP and FIAP to help guide invited paper selection (avoiding duplication), improve meeting organization and scheduling, and ensure that the appropriate audiences are reached.

Joseph E. Greene

Joe Greene is the Donald Willett Professor of Materials Science and Head of the Electronic Materials Division at the University of Illinois and Tage Erlander Professor of Materials Physics at Linköping University, Sweden. He obtained his Ph.D. in Materials Science from the University of Southern California in 1971. His research has focussed on the development of an atomic-level understanding of adatom/surface interactions during vapor-phase crystal growth. In particular, he has used hyperthermal beams and photochemistry to access novel surface reaction pathways, developed hybrid deposition techniques for the growth of new epitaxial metastable phases, and devised and modeled low-temperature $\text{Si}(1-x)\text{Ge}(x)$ atomic-layer epitaxial processes with self-limited kinetics.

Prof. Greene is currently Editor-in-Chief of Thin Solid Films and past Editor of CRC Critical Reviews in Solid State and Materials Sciences. He has served on the Board of Directors and as President of the American Vacuum Society, Chair of the Education Committee and the Thin Film Division of IUVSTA, and the Governing Board of the American Institute of Physics. He is a member of APS, AVS, TMS, and

MRS.

Major awards and prizes include the Thornton Award from the AVS (1991), Senior University of Illinois Scholar (1991) for distinction as a member of the faculty, the Tage Erlander Physics Prize (1992-95) from the Swedish Natural Science Research Council, an Honorary Doctor of Science degree in Materials Physics (1992) from Linköping University, AVS Fellow (1993), the Technical Excellence Award from the Semiconductor Research Corporation (1994), the Department of Energy Sustained Outstanding Research Award (1996), the 1998 David Adler Award in Materials Physics from the APS, APS Fellow (1998), and the 1998 Aristotle Award from SRC.

Statement:

Much of the dynamism and excitement in the field of Materials Physics stems from the fact that it not only embraces the full spectrum, basic through applied, of scientific inquiry, but that research results often lead directly to processes and products that have a major impact on society. A primary goal of the DMP should be to foster and highlight this vitality. One means by which we accomplish this is through the choice of our invited speakers at APS meetings. However, it is also incumbent upon the DMP to enhance the visibility of materials physics within the general public, Congress, and research funding agencies. Our efforts in this area can be leveraged through utilization of available communication and public relations activities within both APS and AIP.

We must ensure that DMP focused session topics represent not only the present research interests of our members but also emphasize emerging areas while utilizing invited speakers capable of describing the importance of their field within the framework of materials physics, articulating the present state of knowledge, and forecasting future directions. Other avenues for keeping the membership informed of new research opportunities include establishing closer interactions (through, for example, co-organizing joint sessions or symposia) with other APS Divisions and closely related materials-science-based societies such as the MRS, AVS, and the Materials Chemistry Division of the ACS.

Finally, it is the responsibility of those elected as Members-at-Large to be available and responsive to the membership and to act as advocates in conveying concerns to the DMP Executive Committee.

Eugene Haller

Eugene E. Haller is Professor of Materials Science at the University of California at Berkeley. He received his diploma (1967) and doctorate (1970) in nuclear and solid state physics, respectively at the University of Basel, Switzerland. In 1971 he joined the Lawrence Berkeley Laboratory to perform research on ultra-pure semiconductors. He identified the first electrically active, hydrogen related centers in ultra-pure Germanium, a phenomenon subsequently studied extensively in most semiconductors. In 1980 he joined the Materials Science faculty at UC Berkeley. His research focuses on semiconductor crystal growth, advanced doping and defect problems, the metal-insulator transition, and far-infrared detectors and coherent sources. In 1990 he initiated research requiring isotopically enriched semiconductors. A broad range of studies with these materials are being conducted worldwide on phonon spectroscopy and transport, solid state diffusion, local vibrational mode spectroscopy, and the metal-insulator transition. Prof. Haller has held visiting positions at the Max-Planck-Institute, Stuttgart and at the Imperial College, London. He is a fellow of the APS and a member of MRS and the Swiss Physical Society. He

has received the Alexander von Humboldt US senior scientist award (1986), a Professorship at the Miller Institute for Basic Research (1990), together with Manuel Cardona, the Max-Planck-Research Prize (1994) and most recently, together with Thomas Anthony, the 1999 James C. McGroddy Prize in New Materials of the APS.

Statement:

Never have advances in materials science and solid state physics been as interdependent as in the past decade. DMP represents this highly symbiotic relationship in the APS. Having dedicated much of my career to the synthesis and characterization of a wide range of semiconductors, I have come to appreciate the interests, needs and goals of both materials scientists and materials and solid state physicists. If elected as a member-at-large of the DMP, I will direct my efforts towards fostering this beneficial relationship by soliciting outstanding focused session proposals and by working towards an increasingly younger DMP membership.

Bennett C. Larson

Ben Larson manages the Thin Films and Microstructures Section, and leads the X-Ray Diffraction Group in the Solid State Division at Oak Ridge National Laboratory (ORNL). He received a Ph.D. in Physics from the University of Missouri, Columbia in 1970, and has been a research scientist in the Solid State Division since that time. He was the recipient of the 1985 Bertram Warren Diffraction Physics Award for nanosecond time-resolved laser melting studies in silicon, and he received the 1974 Sidhu Award of the Pittsburgh Diffraction Society. Larson is a Fellow of the American Physical Society and is currently Chair of the Cornell High Energy Synchrotron Source Policy and Advisory Board.

Larson's research interests include: mesoscale materials physics using microbeam x-ray diffraction; real-time x-ray investigations of nonequilibrium (pulsed-laser) film growth; inelastic x-ray scattering studies of electronic correlations in metals; nanosecond time-resolved x-ray diffraction study of laser melting and rapid thermal transport; diffuse scattering investigations of clustered defects; and synchrotron Mossbauer scattering spectroscopy. He has co-organized a Division of Materials Physics Topical Group Focused Session on "Time Resolved Structural Kinetics of Materials" (1991), co-chaired a Department of Energy Workshop on Future Synchrotron UV and X-Ray Beam Lines (1991), and co-organized a symposium and co-edited the proceedings of a Materials Research Society symposium on "Characterization of the Structure and Chemistry of Defects in Materials" (1988). He has been a consultant/lecturer for the Chinese University Development Project (1985) and was a guest scientist at the KFA-JYlich, Germany (1974-75).

Statement:

The Division of Materials Physics and the American Physical Society play key roles in the development of a fundamental understanding of the physics of materials and advanced materials processing. Providing stimulating forums for the presentation and discussion of Condensed Matter and Materials Physics research is taking on increased importance as new and more powerful experimental, theoretical, and computational capabilities are brought to bear on increasingly diverse materials systems. The Division of Materials Physics plays a critical role here, providing "Focused Sessions" which address current topics in materials physics in a coherent and interdisciplinary manner and complement the traditional invited and contributed sessions at the March Meeting. These focused sessions help the APS span the physics of materials from fundamental concepts to the latest research underpinning materials

applications. As a DMP Executive Committee member at large, I will work to strengthen the "Focused Session" program and to stimulate an effective stream of information to the American public and Congress regarding the impact and importance of science and technology in general, and materials physics in particular. An informed and interested public is critical to attract a scientific work force of the highest quality, to maintain public support for science, and to ensure a fair hearing for science during national budget debates.

Jeffrey W. Lynn

Jeff Lynn is currently a Team Leader in the NIST Center for Neutron Research, and Adjunct Professor of Physics at the University of Maryland. He is a Fellow of the APS, and in addition to DMP he is a member of the Division of Condensed Matter Physics and the Topical Group on Magnetism and its Applications. He received his Ph.D. in Physics in 1974 from the Georgia Institute of Technology, conducting his research in the neutron scattering group at the Oak Ridge National Laboratory under an ORAU fellowship. He then spent 1974-76 as a postdoc at Brookhaven National Laboratory before coming to the University of Maryland as an Assistant, Associate, and then Full Professor of Physics, and Consultant at NIST. He proposed, organized, and initially directed the Center for Superconductivity Research at Maryland. Recently he moved to the Neutron Center at NIST to devote full time to neutron research, becoming Adjunct Professor at UM. His principal research interest is to use neutron (and x-ray) scattering to explore the properties of magnetic and high-Tc superconductors, magnetoresistive materials, ferromagnets, properties of vortex structures, phase transitions and critical phenomena. Among his current professional activities, he is Program Chair for GMAG, is a member of the Scientific Advisory Committee for the Spallation Neutron Source, is a member of the External Advisory Committee for the Solid State Division, ORNL, is a member of the Council on Materials Science and Engineering of SURA, and is a Series Editor for the Graduate Texts in Physics (Springer-Verlag). Homepage: <http://rrdjazz.nist.gov/~jeff/jeff.cfm>

Statement:

Materials physics spans a wide spectrum of activities, from basic research on new materials and phenomena to a broad range of applications in emerging technologies. The primary responsibilities of the Division of Materials Physics should be to organize sessions at APS meetings that best represent new and exciting materials research, and to effectively communicate the enormous value of materials physics to those who control budgets and to society at large. These goals can best be achieved by coordinating efforts with other APS units such as the Division of Condensed Matter Physics, the Forum on Industrial and Applied Physics, and the Topical Group on Magnetism and Its Applications, along with other professional societies such as the Materials Research Society. We also need to develop stronger ties between research groups in industry, universities, and national labs, in order to optimally use our resources, as well as to provide the best training and opportunities for young scientists.

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