

## HISTORY OF PHYSICS NEWSLETTER

### Volume VI Number 6 -- February 1997

#### FROM THE EDITOR

At the May 1995 meeting of the Forum's Executive Committee, I announced my intention to relinquish my responsibilities as Newsletter editor, effective with the completion of this election issue. Although my experience as editor for the past three years has been enjoyable, particularly because it has given me insights into the variety of history-related activities that engage physicists, there is a danger of growing stale by pursuing editorial tasks for too long a time. I am delighted that William Evenson, Professor of Physics at Brigham Young University, has agreed to take over as editor. Bill has already contributed to the *Newsletter* by translating President Mitterand's tribute to the Curies which appeared in the October 1996 issue. He has also been active in organizing Forum-sponsored sessions at APS meetings. Forum members can look forward to lively and informative editions of the *Newsletter* during his tenure as editor.

William A. Blanpied

#### FORUM NEWS

##### Nominations for Officers

Due to the untimely death of Chair-Elect Stanley Goldberg in October 1996 and consistent with APS and Forum's by laws, Vice-Chair C. Stewart Gillmor will become Chair of the Forum in May. Therefore, we need to elect a new Chair-Elect (to become Chair in May 1998), a Vice-Chair (to become Chair-Elect in May 1998), and two Members at Large of the Forum's Executive Committee, each to serve for three-year terms beginning this May. Additionally, Albert Wattenberg has announced that he will retire as Forum Councillor effective the end of this year. Therefore, again according to our bylaws, we need to elect a new Councillor for a four-year term to begin on January 1, 1998. Brief resumes and statements from the candidates appear in the section entitled, [Information About Candidates](#).

*The ballot appears in a separate section which may be downloaded, printed, and mailed to the Forum's Secretary-Treasurer:*

**Professor David Cassidy,  
Hauser Hall 100,  
Hofstra University,  
Hempstead, NY 11550**

#### INFORMATION ABOUT CANDIDATES

##### *Nominees for Chair-Elect*

- **Sylvan Schweber**

Sylvan Schweber is a theoretical physicist by training (Ph.D., Princeton 1952). For the past 20 years he has been a historian of science. He teaches both physics and history at Brandeis University, where he is professor of physics and Koret Professor of the History of Ideas. His primary area of research is the history of 20th century physics.

*Statement:* The discipline of physics is being asked to restructure itself in these post Cold War times. I believe that the history of physics -- and therefore the Forum -- can help us gain insights into how we have come to be where we are. It can therefore help us educate one another about the differences -- in approaches, aims, sociology -- and the commonalities in the various branches of physics. This, I believe, is important in order for us to meet and resolve the difficulties that downsizing at universities and industrial laboratories is making us confront and in order to be able to take advantage of the opportunities that the new world order is presenting.

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- **Roger Stuewer**

Roger Stuewer is professor of the history of science and technology in the School of Physics and Astronomy at the University of Minnesota. He received his Ph.D. in the history of science and physics from the University of Wisconsin in 1968. He has published numerous articles and has written, edited, or co-edited seven books, including *The Compton Effect: Turning Point in Physics* (1975), *Nuclear Physics in Retrospect* (1979), and *The Michelson Era in American Science* (1988). His current area of research is on the history of nuclear physics between the first and second world wars, with particular reference to the various nuclear models that were proposed during that period. He helped organize the APS Forum (then Division) on the History of Physics. His other professional activities have included serving as Secretary of the History of Science Society (1972-78), Member and Chair of the Advisory Committee on the History of Physics of the AIP (1978-93), Co-Chair of an international Commission on the History of Modern Physics (1993-present), Chair of the History and Philosophy of Science Section of the AAAS (1993-94), and President of the University of Minnesota Chapter of Sigma Xi (1994-95). He is a Fellow of the AAAS and of the APS and received a Distinguished Service Citation from the AAPT for his editorship of the Resource Letters of the [begin ital.] American Journal of Physics [begin ital.]. He has been named as Sigma Xi Distinguished Lecturer for 1997-99.

*Statement:* Throughout my career, as illustrated above, I have been active in national and international professional organizations in both physics and history, and more generally I have attempted to foster close intellectual and institutional cooperation between scientists and historians. At the local level, I began to develop a program in the history of science and technology at Minnesota twenty-five years ago that today has seven faculty members in it, each of whom has an office and holds his or her tenure in a science or engineering department. These close ties have promoted deep mutual understanding and respect and shown how scientists, engineers, and historians can work together in teaching and research to the benefit of all concerned. In my view, the APS Forum on the History of Physics can play a leading role in fostering similar mutually supportive and cooperative ventures between physicists and historians, and in this way stimulate much deeper understanding of the vital role of physics in our society.

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### **Nominees For Vice-Chair**

- **Allan Franklin**

Allan Franklin is currently Professor of Physics at the University of Colorado. He began his career as an experimental high-energy physicist, and for the past twenty years has worked in the history and philosophy of science, particularly on the roles of experiment in physics. The historical episodes he has discussed include the discovery of parity non-conservation,

Millikan's oil-drop experiment, the history of weak interactions, the Fifth Force, and the history of the 17-keV neutrino. His publications include *The Neglect of Experiment* (Cambridge University Press, 1986), *Experiment, Right or Wrong* (Cambridge University Press, 1990), *The Rise and Fall of the Fifth Force* (American Institute of Physics, 1993), and "The Appearance and Disappearance of the 17-keV Neutrino," *Reviews of Modern Physics* (1995). He served as Chair of the Forum when it was still the Division of the History of Physics, and is a Fellow of the APS.

*Statement:* I believe that a major issue facing both the Forum and the physics community as whole is the rather negative view of science that is prevalent in both science studies and in the general humanities community. Although members of the Forum confront the critics' view of science by presenting accurate histories of physics, and have also begun to deal with these critical views, I believe more needs to be done. We need to know the criticisms and to provide answers to them. I suggest that some future invited Forum sessions include both the views of the critics of science as well as informed members of our own community so that the issues can be debated. These negative views are those that are being presented to our students, both future physicists and citizens, and also inform the public view of science. I believe such sessions will both inform us about the issues and also encourage members of our community to combat them.

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- **Joseph Mulligan**

Joseph F. Mulligan was born in New York City in 1920, attended Fordham University in that city, and later Boston College, from which he received his B.A. degree in 1945 and his M.A. degree (philosophy) in 1946. His graduate work was done at The Catholic University of America, Washington, DC, where he received his Ph.D. (theoretical physics) in 1951. After further studies in Germany, he joined the physics faculty at Fordham in 1955. From 1956 to 1964 he served as chairman of the physics department, and from 1964 to 1967 as Dean of the Graduate School of Arts and Sciences and, simultaneously, as Dean of the Liberal Arts Faculty. In 1968 he was appointed to the newly-founded University of Maryland, Baltimore County (UMBC), as Professor of Physics, and served also as Dean for Graduate Studies and Research from 1968 to 1982. In addition to articles and book reviews in professional journals, he has authored two textbooks for liberal-arts students: *Practical Physics: The Production and Conservation of Energy* (McGraw Hill, 1980), and *Introductory College Physics* (second edition, McGraw-Hill, 1990); and has edited on book on the history of science: *Heinrich Rudolf Hertz (1857-1894): a Collection of Articles and Addresses* (Garland Publishing, Inc., New York, 1994). Since 1989 he has been Professor Emeritus of Physics at UMBC.

*Statement:* For many years I have had an interest in the history of physics and the history of ideas, and during my teaching career read many biographies of physicists and occasional articles and book reviews in [begin ital.] *Isis* [end ital.]. I used some of this material in my physics lectures, and found that liberal arts students are anxious to know more about the lives of famous physicists, and respond with interest and enthusiasm when such topics are introduced into physics classes. At Fordham I also had some success with a seminar I conducted for Honors Program students on the history of science. In 1982, on resigning my Dean's position at UMBC, I decided to devote my research full-time to the history of science, and in particular to the history of late nineteenth-century physics in Germany. I am fully committed to the role of the Forum on the History of Physics of the APS in encouraging the interest of trained physicists in research, writing and lecturing on the history of physics. This is particularly important at the present time when graduate students in the history of science seem to be avoiding physics as a research field because of its technical nature and difficulty. The Forum should also

encourage journals such as *Physics Today*, *American Journal of Physics*, and *Scientific American* to publish more articles on the history of physics by trained physicists with an interest in, and knowledge of, physics history.

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### **Nominees for Forum Councillor**

- **William Blanpied**

William Blanpied is Senior International Analyst at the National Science Foundation (NSF), a position he has held since 1983. He received his B.S. in physics from Yale in 1955, his Ph.D. from Princeton in 1960, and has held faculty positions in the physics departments at Yale and Case Western Reserve Universities where his research interest was in experimental particle physics, and his favorite teaching assignments involved physics for non-scientists. Blanpied's interest in the history of U.S. (and, later, non-US) science policy developed during a two year appointment as senior fellow at Harvard with Gerald Holton. While at Harvard he founded and edited a newsletter which has evolved into the quarterly journal, *Science, Technology and Human Values*. Prior to coming to NSF in 1976, he was head of the public sector programs division of AAAS, where he initiated that organization's annual R&D budget analysis and science policy colloquium. Blanpied was a founding member of the APS Forum on Physics and Society in 1969, has chaired the APS Forum on International Physics, and has served as Member of the Executive Committee of the Forum on History of Physics and as Editor of its *Newsletter*. He is a Fellow of the APS and the AAAS.

*Statement:* As a college sophomore, I seriously considered majoring in history rather than physics. Instead, I became an amateur rather than a professional historian, and trust that I remain faithful to the root meaning of that word. My amateur status has allowed me - perhaps compelled me - to focus on themes which bear some relationship to my professional responsibilities. In particular, my two-decade interest in the evolution of U.S. science policy from the New Deal to the present has provided a superlative if not always encouraging context for my science policy-related work with the U.S. government. It has also allowed me to understand, better, the profound transformation that are occurring both in the practice of physics and its social and political contexts. While the long-term impacts of those transformations remain unknowable, physicists who possess an historical perspective possess unique tools for understanding their broader implications. The approaching centenary of the APS provides our Forum on History of Physics, working in concert with its sister fora, with an opportunities to inform the ongoing debate about the future of our discipline. Let us take advantage of those opportunities

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- **Gloria Lubkin**

Gloria Lubkin received her A.B. degree in physics from Temple University and her M.S. from Boston University. After a brief time as a nuclear physicist, Lubkin joined *Physics Today* as Associate Editor (1963-69). Since then she has been Senior Editor (1970-84), Editor (1985-94) and is currently Editorial Director. she has emphasized physics history in the journal's coverage of recent events, in historical articles and special issues. In the 1960s she was involved in oral history interviews with Feynman, Serber, Weisskopf, Wheeler and Van Vleck. She was on the APS History Forum's Executive Committee (1983-86 and 1992-95), was Associate Editor of the History of Physics Newsletter (1983-86), Member of the Publications

Committee (1993), and Chair of the Nominating Committee (1995). She helped found the Theoretical Physics Institute at the University of Minnesota and has co-chaired its advisory committee from its inception. In 1990, the institute named a chair in her honor. She was a Nieman Fellow at Harvard University in 1974-75.

*Statement:* Although very few APS members are doing research in the history of physics, many are interested in the topic. The historical sessions our Forum organizes for APS meetings are well attended, and I believe we should try to arrange even more each year. As it becomes more difficult to fund physics research at the levels to which we physicists have become accustomed, while at the same time some people are questioning the basis for objectivity in science, the History Forum can make important contributions: dealing with the history of science policy; helping identify the benefits (and sometimes risks) of past physics research; providing insight and intellectual resources for physics teaching, and communicating physics to the public.

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### *Nominees for Members-at-Large of the Executive Committee*

- **William Evenson**

William E. Evenson is Professor of Physics at Brigham Young University (BYU). He was formerly Associate Academic Vice President, Dean of the College of Physical and Mathematical Sciences, and Dean of General Education at that institution. He received his B.S. in physics at BYU and his Ph.D. from Iowa State University, followed by postdoctoral research at the University of Pennsylvania. His research has been in theoretical and computational solid state physics. He has a long-standing interest in history of physics and served as program chair for the APS Forum on History of Physics in 1995-96. During 1996, he published local newspaper articles on the discovery of radioactivity and the joint work of Marie and Pierre Curie. He is currently a member of the Forum's committee for the centennial of the discovery of the electron. A part of his translation of a speech by French President Francois Mitterand paying honor to Marie Curie is included in the October 1996 *History of Physics Newsletter*.

*Statement:* The programs of the APS Forum on History of Physics increase awareness in the physics community of historical issues and help deepen perspective on current activities in physics. I am committed to broadening the discussion of history in our community, including meaningful interaction between physicists and historians. I believe the Forum should help to expose both the complexities and the beauty of science, with its sophisticated interplay of intellectual and social elements. In particular, the Forum provides an opportunity to educate physicists about challenges to the credibility of science that are fashionable in some intellectual circles these days and to improve the ability of physicists to discuss these issues in settings that can affect public understanding of and support for science. I am committed to helping the Forum be as effective as possible, both in informing physicists about their history and in providing a foundation for more sophisticated discussion of science in the broader community.

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- **Dudley Herschbach**

Dudley Herschbach, Baird Professor of Science at Harvard University since 1976, received his B.S. degree in mathematics and his M.S. in chemistry from Stanford University, followed by an

A.M. degree in physics and a Ph.D. in chemical physics from Harvard. He was a member of the chemistry faculty at the University of California, Berkeley, prior to returning to Harvard as Professor of Chemistry in 1963. Professor Herschbach's current research is devoted to molecular beam studies of reaction stereodynamics, intermolecular forces in liquids and a dimensional scaling approach to electronic structure. He has taught graduate courses in a number of subjects related to his specialties, as well as undergraduate courses in physical chemistry. He also teaches general chemistry for freshmen, which he regards as his most challenging assignment. Professor Herschbach is a Fellow of the American Academy of Arts and Sciences, the national Academy of Sciences, the American Philosophical Society, and the Royal Chemical Society of Great Britain. His awards include the Pure Chemistry Prize of the American Chemical Society, the Linus Pauling Medal, the Michael Polanyi Medal, the Irving Langmuir Prize of the American Physical Society, and the National Medal of Science. In 1986, he shared the Nobel Prize in Chemistry with Yuan T. Lee and John C. Polanyi.

*Statement:* History, especially biography, has always been among my favorite reading. I've enjoyed very much presenting historical parables both in my courses and in lectures for the general public. Such parables offer a means to disarm fears, put even what might seem narrow technical items into a far more appealing and instructive context, and bring out engaging human aspects. A curious but perhaps apprehensive audience finds science much more accessible in such a historical setting. I am now serving as chairman of the advisory committee for the newly launched Office for Public Understanding of Science (OPUS) of the National Academy of Sciences. Among our fledgling projects are a TV series of short (1-3 minutes) episodes and stories for cereal boxes and restaurant placemats; all these will be largely historical. Much of what I might be able to contribute to the work of the APS History Forum will mesh with the OPUS projects. However, I would also like to foster other historical programs aimed especially at young students. So far I have written perhaps 10 or so papers that are entirely or largely historical, including articles on Ben Franklin, Thomas Jefferson, and Otto Stern. I hope to do much more, in an evangelical mode, to celebrate the fabulous history of physics and chemistry, its siren sibling.

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- **Abner Shimony**

Abner Shimony received doctorates in philosophy from Yale (1953) and in physics from Princeton (1962). He taught in the Philosophy Department at MIT from 1959 to 1968 and then held professorships in both philosophy and physics at Boston University from 1968 to 1994, where he is now Professor Emeritus. His philosophical work is mainly in inductive logic, naturalistic epistemology, philosophy of physics, and the relations of physics to biology and psychology. Within physics his primary work has been in the foundations of quantum mechanics, especially on the design of experiments to test Bell's inequality and variants of quantum dynamics. A collection of scientific and philosophical essays, [begin ital.] *Search for a Naturalistic World View* [end ital.], won the Lakatos Award for 1996. In 1995 and 1996 he was president of the Philosophy of Science Association. He has worked on issues of peace and arms control and has taught several courses on nuclear weapons.

*Statement:* History of physics has been valuable for some of my research in the foundations of quantum mechanics and in philosophy of science. Regarding the former, a study of published and unpublished documents and the questioning of elderly physicists have thrown light on the Bohr-Einstein debate, the quantum mechanical measurement problem, and the hypothesis of hidden variables. In particular, I was able to find out Einstein's attitude towards the famous argument in von Neumann's book that hidden variables are incompatible with the algebraic structure of quantum observables. Regarding the latter, I

have examined historical data bearing (mainly negatively) on the thesis that observations are theory-laden, and have studied ways in which scientific methodology is refined by reflection upon scientific achievements. I feel strongly that the interplay of current physics, history of physics, and philosophy of physics is very stimulating for all three disciplines and is extraordinarily valuable in teaching these subjects at both an undergraduate and a graduate level.

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- **Martin Walt**

Martin Walt received his B.S. from Caltech in 1950 and his Ph.D. from the University of Wisconsin in 1953, both degrees in physics. After completing his Ph.D. he joined the Los Alamos Laboratory and conducted neutron scattering experiments. In 1956 he moved to the Lockheed Palo Alto Research laboratory where he continued research in nuclear physics. This work led to experiments in space on topics such as the radiation belts, aurora, cosmic rays, and space plasma physics. At Lockheed he has held a number of scientific and management positions, eventually retiring in 1993 as Director of Research. Since 1986 he has also been a Consulting Professor at Stanford University where he now continues space research and teaches a course in geomagnetically trapped radiation. A member of APS since 1951 and a member of the American Geophysical Union (AGU) since 1986, he is now a Fellow in both societies. For AGU he has served on several committees and was General Meetings chairman for two years. He has been a member of the Board of Governors of AIP, the Board of Overseers of the Superconducting Super Collider, and various committees of the NSF, NASA, and DoD.

*Statement:* The Forum on History of Physics has the opportunity and responsibility to acquire, preserve, and promote the distribution of information on the history of our fields. As a member of the AGU Committee on History and as General Meetings Chairman of AGU Annual Meetings, I was impressed by the interest of the membership exhibited in history sessions at annual meetings. A knowledge of our scientific roots provides a perspective on past events and makes the research enterprise more understandable and appealing, particularly to younger members. The last half century has seen enormous advances in fields such as plasma physics, astrophysics, magnetospheric physics, and planetary science, to name a few. Many of the pioneers of this work are still with us, and it is essential that we preserve a record of their experiences for future generations. It is also important that this record be made available in published works and in special sessions at society meetings. The Forum on History of Physics can be a vital factor in promoting these activities throughout the APS.