

# Forum on History of Physics

Feb 1998 Newsletter

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Forum Chair

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## Forum Chair Tells of APS Centennial Plans

The APS Centennial is coming up in 1999, and the Forum on History of Physics is scheduled to play a major role in the celebration. The Centennial APS meeting will be held in Atlanta in March 1999 and will be the largest and most diverse APS meeting in history. The Forum is arranging to display the Einstein posters originally developed about 20 years ago, and the Forum Centennial Committee (DudleyHerschbach, chair: [herschbach@chemistry.harvard.edu](mailto:herschbach@chemistry.harvard.edu)) is considering developing a display or displays about other 20th century American physicists, with initial planning focusing on I. I. Rabi. In addition, the Forum Program Committee (Allan Franklin, chair: [Allan.Franklin@colorado.edu](mailto:Allan.Franklin@colorado.edu)) is working on several invited sessions for Atlanta (possibly to include sessions on Rabi and diverse topics on physics in the 20th century). The Forum has four sessions assigned, which with cosponsorship might become six. And many of the APS units (divisions, forums, and topical groups) are planning historical sessions in their own areas of interest that they may coordinate, if not cosponsor, with our forum. In short, many exciting events relating to history of physics are on the drawing boards for Atlanta in 1999.

I invite Forum members to volunteer for service and/or to send suggestions c/o Dudley so we can put on a first-class show during the Centennial. The "Centennial Celebration" will include not only our general APS meeting in Atlanta, but also any of our sectional or divisional meetings that year, for which our members might have suggestions.

-C. Stewart Gillmor, Forum Chair

## From the Editor

### PALOMAR OBSERVATORY FIFTIETH ANNIVERSARY

The 200-inch Hale Telescope at Palomar Observatory was dedicated June 6, 1948. At this fiftieth anniversary, it is interesting to reflect on the many fundamental discoveries in astrophysics made using the

Hale Telescope over the years, including "the early work on stellar populations and stellar evolution, the first optical identifications of radio sources, the discovery of quasars, the early studies of the Lyman-alpha forest, and many others" (George Djorgovski). The front page photo in this Newsletter is of the dedication ceremonies fifty years ago.

Anniversaries give us the opportunity and stimulus to review important advances in our science. I would appreciate suggestions from our readers of anniversaries or special events that might be highlighted in the Newsletter.

-Bill Evenson, Editor



## Forum News

The Forum on History of Physics will sponsor three sessions at 1998 APS national meetings.

### **Los Angeles, March 16-20**

A session entitled **The History of Critical Phenomena** will be held on Friday, March 20 at 8am in Room 408B of the Los Angeles Convention Center. It will include talks by Johanna M.H. Levelt Sengers of NIST, P.C. Hohenberg, Yale, and Michael E. Fisher, University of Maryland.

### **Columbus, April 18-21**

The Forum has arranged a session on **Science and Its Critics** to be held Saturday, April 18 at 11am, with talks by Professors Kurt

Gottfried of Cornell (physics), Ullica Segerstrale of Illinois Institute of Technology (social sciences), and George Levine of Rutgers (English).

Also at the April Meeting, a session is planned on **The Teaching of Physics a Century Ago**, co-sponsored by the History and Philosophy of Physics Committee of the AAPT. This session will be held on Sunday, April 19 at 11am. Speakers for this symposium will include Kathryn Olesko, Georgetown, "Fin de Siecle Physics Pedagogy in Europe," John Michel, Minneapolis, "The Teaching of Physics in the US," and Stewart Gillmor, Wesleyan, "The Teaching of Physics at US Women's Colleges."

## Notes & Announcements

### International Catalog of Sources for History of Physics and Allied Sciences is Now Online

The AIP Center for History of Physics is pleased to announce the online version of the International Catalog of Sources for History of Physics and Allied Sciences (ICOS) at <http://149.28.112.25/pdi/icos.cfm>, or for an easier address link from the Center's homepage at <http://aip.org/history/>. The ICOS includes information about primary source material - papers of scientists, records of major institutions, oral history interviews, etc. - preserved in the Center's Niels Bohr Library and over five hundred other repositories worldwide. The collections described (currently over 5000 records) document physics and related fields, such as astronomy, acoustics, optics, and geophysics, chiefly from the late 19th century to the present. Please contact [nbl@aip.org](mailto:nbl@aip.org) if you have any questions or comments about the ICOS online, or if you can provide us with new or updated information to add to the catalog.

### Physics in Perspective

Birkhauser Verlag has announced the publication of a new journal, *Physics in Perspective*, with John S. Rigden and Roger H. Stuewer as Editors-in-Chief. An international Editorial Board has been appointed consisting of physicists Hans von Baeyer (William and Mary), Anthony P. French (MIT), Theodor W. H $\ddot{u}$ nsch (Munich), Dudley R. Herschbach (Harvard), N. David Mermin (Cornell), Martin L. Perl (SLAC), Sir Brian Pippard (Cambridge), and Michael Riordan (SLAC); philosophers James T. Cushing (Notre Dame), John Earman (Pittsburgh), Allan D. Franklin (Colorado), Don Howard (Notre Dame), and Margaret C. Morrison (Toronto); historians Fabio Bevilacqua (Pavia), Christine Blondel (Paris), David C. Cassidy (Hofstra), Manuel G. Doncel (Barcelona), Kostas Gavroglu (Athens), Klaus Hentschel (G $\ddot{u}$ ttingen), Erwin N. Hiebert (Harvard), Dieter Hoffmann (Berlin), Jeffery A. Hughes (Manchester), Helge Kragh (Aarhus), Arthur I. Miller (London), Dominique Pestre (Paris), Alan E. Shapiro (Minnesota), and George Wise (GE Corporation); and science writers Timothy Ferris (Berkeley), James Gleick (New York), and Curt Supplee (Washington, D.C.). The first issue of *Physics in Perspective* is

scheduled for publication in January 1999.

*Physics in Perspective* will be devoted to papers and review articles on the history and philosophy of physics that are of interest to a broad audience of readers. Historical and philosophical studies are essential to understanding the foundations of physics, to elucidating the intimate and often unpredictable interplay of observation, experiment, and theory that occurs over extended periods of time, to analyzing the diffusion of physics into all areas of science, and to appreciating the cultural influence of physics on the arts and humanities. The values that undergird physics must be understood and appreciated by citizens if the quest for basic knowledge, as well as its application for practical ends, is to prosper in their cultural milieu. To this end, the history and philosophy of physics constitute a vital means for bridging the intellectual gulf between physicists and non-physicists, between physicists and people who work in other intellectual or professional vineyards. *Physics in Perspective* was created to convey to a broad audience of readers a deeper understanding and appreciation of the way physics is conducted, of its content and applications, and of the profound influence that physics has had in changing our conception of the natural world and in shaping our modern scientific and technological culture.

Historical articles can be situated in any cultural context and in any period of time, from antiquity to the present. Authors can explore the theoretical and experimental foundations of physics; the nature and achievements of physics in academic, governmental, and industrial settings; the role of physics as both a source and a product of new instruments and devices; and the humanistic and cultural dimensions of physics. Authors also can elucidate the historical patterns through which distinct areas of physics coalesce or separate over time, or extend into allied scientific disciplines such as astrophysics, chemical physics, and geophysics, and they can treat the emergence and achievements of new scientific disciplines such as biophysics and medical physics.

First-person accounts by physicists of significant historical episodes in which they themselves took part, as well as biographical accounts that illuminate the attitudes of physicists who were engaged in the resolution of perceived scientific conflicts or contradictions are welcome.

Philosophical articles can focus on any subject that makes some connection to foundational or historical issues. Both historical and philosophical articles can treat specialized topics, but they also should endeavor to make appropriate connections to a broader context that enables non-specialists to appreciate their significance. *Physics in Perspective* encourages the publication of papers that integrate the history and philosophy of physics in some substantial way, as well as review articles that make the results of historical and philosophical studies accessible to physicists, teachers, students, and the public at

large.

The Editors-in-Chief solicit manuscripts for publication in *Physics in Perspective*. Prospective authors should contact either editor to receive a set of "Instructions for Authors." Their addresses are John S. Rigden, American Institute of Physics, One Physics Ellipse, College Park, MD 20740, Fax 301-209-0841, ([jsr@aip.org](mailto:jsr@aip.org)) and Roger H. Stuewer, Tate Laboratory of Physics, University of Minnesota, 116 Church St. SE, Minneapolis, MN 55455, Fax 612-624-4578, ([rstuewer@physics.spa.umn.edu](mailto:rstuewer@physics.spa.umn.edu)).

#### **Position opening**

**THE COLLECTED PAPERS OF ALBERT EINSTEIN**, Boston University, Boston, MA.

The Einstein Papers Project invites application for the position of an Assistant or Associate Editor for fall 1998. Candidates should be trained in physics and the history or philosophy of science, and have a good reading knowledge of German. In addition, a specific background in the history and the philosophical interpretations of early-twentieth century physics is desired, in particular in regard to quantum theory, statistical physics, relativity, and cosmology. Prior editorial experience is advantageous. The Collected Papers of Albert Einstein publishes Einstein's major scientific and non-scientific writings along with his correspondence. With six volumes in print and two in preparation, the Project is now beginning to work on Einstein's life in the 1920s. While the editorial offices are located at Boston University, members of the Einstein Papers staff are employees of Princeton University Press, publisher of the Collected Papers. Competitive salary and benefits. For further information, call (617)353-9250, or visit our website at <http://albert.bu.edu>. Submit your resume, three letters of recommendation, and one writing sample to Prof. Robert Schulmann, Einstein Papers, Boston University, 621 Commonwealth Avenue, Boston, MA 02215.

#### **NASA Archives Online**

The NASA History Office has recently placed online finding aids for official records contained in the National Archives and Records Administration. These are available at <http://www.hq.nasa.gov/office/pao/History/nara/nara1.html>

#### **Computers in Spaceflight Available Online**

The NASA History Office has made Computers in Spaceflight: The NASA Experience, written by James E. Tomayko as a contractor report in 1988, available online. This report covers computers in the Gemini, Apollo, Skylab, and Shuttle programs, as well as for robotic spacecraft and ground systems. It is available at <http://www.hq.nasa.gov/office/pao/History/computers/Compspace.html>

#### **Session on Long- and Short Term Variability in the Sun's History and Global Change**

A conference on the sun's history will be held during the Assembly of the International Association of Geomagnetism and Aeronomy (IAGA) at Birmingham (UK) in July 1999. This conference will address the possibility of a comprehensive synthesis of science studies across the variability in the sun's history during the last centuries. Topics will include papers from history, archaeology, solar physics, astrophysics, aurora physics, geophysics, meteorology and environmental aspects. It deals with the so-called Minima in Sun's History (Spörer-, Maunder-, LaLande-, and Wolf Minima) and other variabilities during the centuries. Deadline for abstracts is **January 15, 1999**. For further details contact the convener Dr. Wilfried Schröder, Hechelstrasse 8, D-28777 Bremen-Roennebeck, Germany.

## Book Review

**Gordon Fraser, The Quark Machines: How Europe Fought the Particle Physics War (Institute of Physics Publishing, Bristol and Philadelphia, 1997).** 210 pages. \$20.00 (□12.99).

*Reviewed by Roy Schwitters, S. W. Richardson Professor of Physics, University of Texas at Austin*

The twentieth century will forever be remembered as the time when people deciphered the principles underlying the structure of matter and nature of forces. The job is not yet finished, but the subtlety and precision of quantum field theory and relativity were able to transcend the mechanical universe of Newton and Maxwell, representing a milestone of human culture and intellect. An important thrust in 20th-century physics has been the extension of Rutherford's program for revealing structures in matter to smaller and smaller scales through the interplay of experimental discovery, theoretical insight, and technological advance, culminating in the acceptance of the "Standard Model" of particle physics in the 1970's.

In his new book, Gordon Fraser gives us an impressionist picture of some of the key people, ideas and tools that contributed to the Standard Model with bright splotches of color spread over a broad range of space and time on the backdrop of the major historical events of this century. His basic thesis—perhaps overplayed by his publisher in the book's subtitle—is that Hitler's actions, such as the 1933 Civil Service Restitution Act legalizing antisemitism and launching the movement of a generation of outstanding European physicists to America, led directly to the fall of European physics and its replacement by US preeminence in particle physics during the decades following World War II. Fraser claims, however, that the pendulum has now swung back to Europe with the maturation of the European Particle Physics Laboratory, CERN, from its start as a symbol of European unity in 1953, and the unwillingness of the United States government to pursue a leading role in such expensive, basic science after the end of the Cold War, as exemplified by the cancellation of the Superconducting Super Collider (SSC) project in 1993.

Fraser does not dwell on the chauvinistic possibilities of this scenario,

but tells, from a European perspective, many stories about the key players in mid-20th century science and how they developed the ideas, machines, and political frameworks that permitted the great advances in sub-atomic physics that took place. The organizing themes of these stories are the growth of CERN and the development of the Standard Model. Rather than a "particle physics war", what emerges is a rich fabric of mutual support and friendly, but serious competition.

The pieces that make up the portrait of CERN are, perhaps, the most compelling in this short book. I. I. Rabi—archetypical New Yorker, born in Galicia, Nobel Prize winning scientist, and scientific leader/statesman in the WW II development of both radar and nuclear weapons—used his considerable talents and experience to place the concept of European collaboration in nuclear physics on the agenda of a 1950 UNESCO meeting. Teaming up with the European scientific-statesmen, Pierre Auger and Edoardo Amaldi, Rabi & Co. ignited an audacious plan to build a European center for nuclear physics—Conseil Européen pour la Recherche Nucléaire—that was formally launched in 1952, modeled on Brookhaven National Laboratory in the United States and supported by substantial contributions from the European member countries. The always difficult issue of site was resolved in 1953 and the new laboratory was formed adjacent to the Swiss-French border just outside Geneva, Switzerland.

By this time, high energy particle accelerators had become the instruments of choice in nuclear and sub-nuclear research. To plan their new accelerator, a technical group from CERN visited Brookhaven in 1952 to learn the details of the then-highest energy machine, a behemoth known as the Cosmotron. In preparation for the visit, Stanley Livingston, a former associate of E.O. Lawrence at Berkeley who participated in the invention of the cyclotron, held a workshop on accelerator design, out of which the concept of "strong-focusing" was discovered. This idea was crucial for future advances of all kinds of particle accelerators. Fraser beautifully describes what happened when the CERN team came to Brookhaven:

"The European visitors arrived at Brookhaven prepared to learn how to make a replica of the Cosmotron and instead learned that the Cosmotron had suddenly become out of date. This visit set the tone for the continuing relationship between the new European generation of physicists and their American counterparts. It was a relationship based on mutual respect, coloured by a healthy spirit of competition, and was to work to their mutual advantage. Untempered, competition can lead to jealousy and secrecy, but in particle physics this has rarely been the case. Although each side has striven to push its own pet projects, collaboration and assistance have always been available, and the community as a whole welcomes and admires breakthroughs and developments, wherever they are made and whoever makes them."

The strong-focusing Proton Synchrotron which began operating in 1959, permitted CERN to leap ahead, for a time, of the United States



and the Soviet Union in the quest for higher energies.

Fraser admits to a certain inferiority-complex on the part of CERN's experimenters during the first half of its history. Starting with the Proton Synchrotron, CERN's machines have performed according to or beyond design specifications, but some of its experiments and particle detectors have been criticized for missing out on discoveries made elsewhere. Putting aside the merits of such criticisms, by the 1970's, CERN experiments, such as the discovery of "weak neutral-currents" with the Gargamelle bubble chamber, certainly became world-class. Indeed, superior instrumentation on the Super Proton Synchrotron wrestled definitive results away from Fermilab's Main Ring even though it began operating several years after the Fermilab accelerator. Today's most sensitive tests of the Standard Model rely on measurements from CERN's Large Electron Positron collider (LEP), currently the world's largest particle accelerator with a circumference of 27 km.

Fraser outlines the aborted history of the Superconducting Super Collider, a proton-proton collider designed to explore energies beyond the current horizon of understanding, where new phenomena outside the current scope of the Standard Model are expected to be found. Born from a consensus in the US particle physics community in the 1980's to recapture the high energy frontier, the SSC was planned to be three times the size of CERN's LEP. SSC construction began in 1989 around the town of Waxahachie, Texas, but was terminated by Congress in 1993, after about 20% of the machine was completed and around \$2B was spent by the US government and State of Texas. As this review was being written (December 1997), the United States government signed an agreement with CERN committing \$500M to help build and instrument the Large Hadron Collider, CERN's lower-energy version of the SSC, which is scheduled to displace LEP from its tunnel, starting physics studies around 2005. This unprecedented contribution by the United States to CERN will permit US physicists to participate in experiments at the energy frontier, but represents, in Fraser's view and those of many others, a substantial change in the respective leadership roles of the United States and Europe in the pursuit of the fundamental laws of physics.

## Forum Elections

The Ballot is on the back cover of your paper Newsletter. Please vote for **Vice-Chair**, **Secretary-Treasurer**, and **two Members at Large** of the Executive Committee. Brief resumes and statements from the candidates begin on this page.

### Nominees for Vice-Chair

#### **Laurie M. Brown**

Laurie M. Brown Laurie M. Brown is Professor of Physics and Astronomy (emeritus) at Northwestern University, where he has been a faculty member since 1950. He received his PhD under Richard



Feynman at Cornell University, and has published numerous articles on the theory of elementary particles. During the past two decades he has written mainly on the history of recent physics (including a long-term project on Japanese physics), for history of science and physics journals and for reference works. He has been an author and/or editor of eight books, most recently *The Birth of Particle Physics* (1997), *The Origin of the Concept of Nuclear Forces* (1996), and *Twentieth Century Physics* (1995). He was one of the founders of the Forum (then Division) on History of Physics, served as its first Vice-Chair, and later on its Executive Committee (1989-92). He organized a number of sessions at APS meetings for the Forum and was a principal organizer for three Fermilab-SLAC conferences on the history of particle physics.

**Statement:** The Forum has an important role to play in the advancement of the physics profession as we approach the millennium. After a century of remarkable achievements and commensurate public appreciation, there appears to be a plateau, if not an actual decline, in public interest and in the enthusiasm of younger people for a career in physics. This is in part a matter of funding and job shortages, but it may also be a result of over-specialized training, leading to the loss of a broad view of the scientific enterprise. Nothing can do more to emphasize the unity of physics and its unique perspective than the preservation, study, and presentation of its history. The Forum encourages the interaction of physicists and historians engaged in physics history, and should help to present the best face of physics to the public.

**Joseph F. Mulligan**

Joseph F. Mulligan received both his B.A. degree in philosophy (with a minor in physics) in 1945 and his M.A. in 1946 from Boston College. In 1951 he was awarded the Ph.D. in theoretical physics by The Catholic University of America in Washington, D.C. After further studies in Germany, he joined the physics faculty at Fordham University in 1955, and served as chairman of the Physics Department there from 1956 to 1964, and as Dean of the Graduate School of Arts and Sciences and, simultaneously, as Dean of the Liberal Arts Faculty from 1964 to 1967. In 1968 he moved to the newly-founded University of Maryland, Baltimore County (UMBC) as Professor of Physics and, from 1968 to 1982 also served as Dean for Graduate Studies and Research. He has written two introductory physics textbooks for liberal arts and pre-medical students (McGraw Hill, 1980 and 1990). Since 1989 he has been Professor Emeritus of Physics at UMBC.

**Statement:** For many years I have had an interest in the History of Science and the History of Ideas, and during my teaching career read many biographies of physicists and occasional articles and book reviews in *Isis*. 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 and Great Britain. Since that time I have edited one book on the history of physics: Heinrich Budolf Hertz (1857-1894): A Collection of Articles and Addresses (Garland Publishing, Inc., New York, 1994), and have published or have in press ten articles on the history of physics. I am fully committed to the role of the APS History Forum 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 encourage journals such as *Physics Today*, *American Journal of Physics*, *Scientific American*, and *American Scientist* to publish more articles on the history of physics by trained physicists with an interest in, and knowledge of, physics history. It should also encourage members of the Forum to submit appropriate articles on the history of physics to newspapers and popular magazines.

### **Nominees for Secretary-Treasurer**

#### **William E. Evenson**

William E. Evenson is Professor of Physics at Brigham Young University. He was formerly Associate Academic Vice President, Dean of the College of Physical and Mathematical Sciences, and Dean of General Education at BYU. He received his BS in physics at BYU and PhD 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 1995-96 and on the committee for the centennial of the discovery of the electron in 1997. He has published local newspaper articles and spoken to university and high school audiences on history of physics topics. A part of his translation of French President Francois Mitterand's speech honoring Marie Curie was included in the Fall 1996 History of Physics Newsletter. Since Fall 1997, he has been editor of this Newsletter. He is also chair of the APS FourCorners Section for Arizona, Colorado, New Mexico and Utah.

**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.

**Kameshwar C. Wali**

KC Wali did his undergraduate and masters degrees in physics and mathematics in India and graduate work at the University of Wisconsin, Madison, specializing in elementary particle physics. After two years at Johns Hopkins University as a Research Associate, he joined the High Energy Theory Group at Argonne National Laboratory in 1962. Since 1969, he has been at Syracuse University as Professor of Physics.

**Statement:** I have a deep and abiding interest in the history of physics. Along with Laurie Brown, Al Wattenberg and others, I became a Founding Member of the Forum on History of Physics and currently am a member of its Executive Committee. I realize the importance and understand the responsibilities of the Secretary-Treasurer in the smooth operation of the Forum. If elected, I will strive my best to see that the activities of the Forum occupy a prominent place in the APS. I also think that the Forum has an important role to play in generating and communicating enthusiasm for physics among the young and public at large.

**Nominees for Executive Committee**

**Alanna Connors**

Alanna Connors received her S.B. in physics from MIT in 1978, with M.S. and Ph.D. from University of Maryland, 1984 and 1988, in X-ray Astrophysics at GSFC/NASA. She is now working as a Research Scientist in gamma-ray astrophysics (CGRO-COMPTEL) at the University of New Hampshire, investigating time-variable phenomena such as gamma-ray bursts, solar flares, and pulsars. She specializes in Bayesian techniques (which is historically interesting in itself), and she has researched and created an exhibit on "Historical NH Women in Science".

**Statement:** I am interested both in the rich cultural history of science, and the history of the ideas of science itself. (Doing the former without the latter seems to me like studying literature only in translation; one needs to study Nature in as close to her own language as possible.) As a woman in science, hearing historian Laurel Thatcher Ulrich speak of moving to a fourth stage of women's history (1: there are no women in history; 2: there were a few brave women who made it against all odds; 3: these women came out of the context of the everyday lives of a great mass of women; 4: how can one put "men's" and "women's" history together, to see it in a larger, shared context -- for example, asking to what extent gender relations are expressions of

power relations in a subculture) has been helpful to me in analyzing my own encounters both with past history and current culture. But also, histories of individuals' first encounters with new aspects of physics have been useful to me both as a researcher and as one interested in teaching (cf Cavicchi 1997, AJP 65:9) -- whether it be Faraday's technique of keeping several competing theories in mind at once; or that Galileo's math involved only "pure" ratios, and not the perhaps confusing (to beginning students) "mixed" ratios we use today (such as velocity and density). I would enjoy working to have both aspects of the history of physics represented at meetings and presented to the public at large.

**Martin C. Gutzwiller**

Martin Gutzwiller was born and raised in Switzerland. He received a diploma in physics from ETH (with W. Pauli), did microwave engineering with BBC, received the PhD from University of Kansas (with Max Dresden), did geophysics with Shell Oil in Houston TX, then solid-state and atomic physics with IBM Research in Switzerland, New York City, and Yorktown Heights (retired since 1993). He has taught at Columbia U, ETH Zurich, Paris-Orsay, Yale U, and Stockholm. He is a Fellow of APS and a member of the US National Academy of Sciences. He has published some 50 research papers, and a textbook (1990) on "Chaos in Classical and Quantum Mechanics".

**Statement:** History of physics transforms our profession into a truly human enterprise; it is a wonderful and useful pursuit. Clearly a layperson or a beginning student benefits greatly from going through the development of ideas, observations and experiments, including personal circumstances, detours or even dead-ends, in order to appreciate, and profit from, the latest achievements. The historical perspective also helps in making a better choice of a special topic for active research. Different levels of explanation improve our understanding and stimulate new approaches. Our own preferences then become more clear and our papers more readable, rather than mere technical reports with partial results. The Forum on History of Physics can foster more interest and awareness of our connection with the past by active participation in seminars, conferences, journals, books, and by providing teaching tools at all levels. I had this opportunity recently in writing an article for The Reviews of Modern Physics (April 1998) on "Moon-Earth-Sun: the Oldest Three-Body Problem", and a resource letter for The American Journal of Physics (Spring 1998) on "The Interplay of Classical and Quantum Mechanics". As physics matures, our history will help everybody to set our sights and make our plans for the future.

**Jay M. Pasachoff**

Jay M. Pasachoff is Field Memorial Professor of Astronomy, Director of the Hopkins Observatory, and Chair of the Astronomy Department at Williams College, Williamstown, MA 01267. He has long been interested in the history of astronomy, primarily through the work of and the rare books published by Copernicus, Galileo, Kepler, and

Newton. His 12-year collaboration with the art historian Roberta J. M. Olson has most recently led to their book *Fire In The Sky: Comets and Meteors, the Decisive Centuries, in British Art and Science* (Cambridge University Press, 1997). The book deals with drawings and other works from Newton, Halley, and many later scientists and artists. Their historical comet work has been supported by grants from the National Endowment for the Humanities and from the Getty Grant Program. Pasachoff is on the Executive Committee of the APS Forum on Education, a term that would expire before this position on the Forum on History of Physics would begin. He is U.S. National Representative to the Commission on the Teaching of Astronomy of the International Astronomical Union and Chair of Division D (Astronomy) of the American Association for the Advancement of Science.

**Statement:** I am interested in doing my share to further the role of historical work in the education of physicists and astronomers and to making these scientists aware of the interesting research now being carried out on historical topics.

**Thomas von Foerster**

Thomas von Foerster was born in Berlin, Germany, in 1941. He came to the United States with his parents in 1949, when his father, a physicist, obtained a position at the University of Illinois at Urbana-Champaign. Tom studied physics first at the University of Illinois and then at Harvard University. He received his doctorate there in 1968, working on theoretical quantum optics. He subsequently taught physics at Harvard and at Wellesley College; results of his research appeared in papers in *Physical Review*, *The American Journal of Physics* and *Journal of Physics*. At Harvard, Tom also served as a tutor on one of the undergraduate housing units. In 1978 Tom moved to New York to work at the American Institute of Physics, where he was managing editor of *Physics Today* magazine for ten years, after which he moved to the Books Division of AIP, as Physics Editor. Since 1990 he has been at Springer-Verlag New York, an international scientific and technical publisher, where he is now Executive Editor for Physics, Mathematics, and Engineering. In his first years in New York, Tom also taught an evening course at the New School for Social Research on "The Physics of Aesthetics" for a few years. In Massachusetts, Tom served as the secretary of the Gay Academic Union of New England, where he helped to organize a series of regional conferences. After moving to New York, he served as treasurer of the Chelsea Gay Association and as the editor of its newsletter until the CGA was disbanded in 1986. When the New York City Antiviolence Project was founded by the CGA in 1980, Tom was named its Secretary-Treasurer, and he served on the AVP Board of Directors from 1980 until 1991.