DPF NEWSLETTER - October 1, 1997

To: Members of the Division of Particles and Fields

From: Jonathan Bagger, Secretary-Treasurer, bagger@jhu.edu

1997 DPF Elections

In the 1997 ballot, Gene Beier was elected Vice-Chair of the DPF. Cathy Newman-Holmes will become Secretary-Treasurer. Nick Hadley and Donna Naples were elected to the Executive Committee. The members of the 1998 DPF Executive Committee and the final years of their terms are

Chair: Howard Georgi (1998)
Chair-Elect: Howard Gordon (1998)
Vice-Chair: Eugene Beier (1998)
Past Chair: Paul Grannis (1998)
Secretary-Treasurer: Catherine Newman-Holmes (2000)
Division Councillor: Henry Frisch (1998), George Trilling (1999)
Executive Board: Pat Burchat (1999), Tom Devlin (1998), Nicholas Hadley (2000), Kay Kinoshita (1999), Donna Naples (2000), Heidi Schellman (1998)

HEPAP News

John O'Fallon, Director of the DOE Division of High Energy Physics, discussed the FY98 budget at the July HEPAP meeting. He reported that the total requested by the President was $670.1M, a constant level from the FY97 budget. Both houses approved the requested number, or close to it. (This figure excludes a transfer of $4.96M for waste management activities.)

O'Fallon commented that LHC now seems to have significant support in Congress, thanks to a great deal of effort on the part of members of the community, as well as agency officials. Indeed, both the House and the Senate included the \$35M requested for the LHC in FY98. However, the House report stated that no FY98 funds could be used for the LHC project until the Secretary of Energy, in consultation with the Director of NSF, transmits a report to Congress addressing several specific LHC-related issues. (See http://www.aps.org/units/dpf/lhc/ for more information.)

Peter Rosen, Director of the Office of High Energy and Nuclear Physics, pointed out that many people have no idea that DOE funds science, although by many measures it is one of the top five agencies for science funding in this country. In fact, it is number one for both R&D facilities and for physical sciences This information needs to be made known to the public as well as Congress and other parts of the government.

Letter to the Community

The following letter is addressed to the DPF community by R. Michael Barnett, DPF Congressional and Public Information Coordinator.

Dear Colleagues,

As you may know, the House and Senate have completed action on the FY98 appropriations for high energy physics. A few months ago, a significant cut in the base program and elimination of funds for the LHC seemed a real possibility. Now both Houses have passed appropriations bills that we should be pleased with (small differences will be settled in a House-Senate conference committee). The successful outcome demonstrates both the interest in Congress in sustaining a strong U.S. research effort, and the extent to which input by the scientific community can be effective.

The Senate bill states:

"The Committee has provided the full amount of the request for high energy physics and strongly endorses U.S. participation in the large hadron collider." It also says: "The Committee is concerned that the level of funding requested by the Department for science is inadequate to make full use of research facilities..." and suggests that the FY99 request from DOE should more fully support the laboratories and the "university researchers conducting experiments at these facilities."

The House bill added an additional $5 million to the Senate bill (for a total of $680 million, about $10 million over this year) and states:

"The Committee recognizes the importance of this new machine to the physics community. The nation's scientists who have played a vital role in the recent cutting edge discoveries at Fermilab and other U.S. facilities, including the discovery of what may be the top quark certainly should have an opportunity to participate in the cutting edge science that will be possible upon completion of the world's most powerful accelerator."

We should give credit to all those who have helped assure Congressional support for high energy physics in FY98. The result is undoubtedly due to the valiant efforts of many people. Large numbers of physicists visited or contacted Members of Congress and explained the role of high energy physics in our nation's science and technology endeavor. At the DPF Congressional reception and on many other occasions, physicists doing experiments at SLAC, Brookhaven, and Fermilab played strong roles in communicating our unified concerns about maintaining the vitality of our field. The reception and other activities had the strong support of the APS (in particular, Judy Franz and Michael Lubell) and of the URA.

In the period when our prospects seemed grim, the officials of the DOE and NSF were outstanding in responding to Congressional concerns and finding solutions that satisfied our critics. We are particularly appreciative of the tireless efforts of Martha Krebs, Peter

Rosen, John O'Fallon, and their staffs at the DOE and Robert Eisenstein, Marvin Goldberg and Patricia Rankin of NSF. They worked with our community to assure that we too would be satisfied. Their activist response was a major contributor to the happy outcome.

University and laboratory congressional liaison personnel and university presidents and laboratory directors were also very active in defending our research. The leadership of the U.S. LHC effort including George Trilling (chair of the U.S. LHC Executive Committee) and the U.S. leaders of ATLAS and CMS were persistent and energetic in explaining the importance of LHC for the future of our field. We also benefited from the strong support of the Secretary of Energy Federico Pena, NSF Director Neal Lane and the President's Science Advisor, John Gibbons.

Within Congress (in both parties), there are Members who truly understand the importance of basic science on the frontier and came to our aid. Undoubtedly there are others not known to us who helped defend our field.

Clearly it is the responsibility of all scientists to bring the case for enlightened support to the Congress. Just as clearly, that support rests upon an appreciation of the general public that what we do has value. While being pleased at the strong and effective effort this year, we must continue to bring the case for all of science to the public and will need to work again next year to make our elected representatives aware of this case.

HEPAP Subpanel

Fred Gilman is leading the HEPAP Subpanel on Planning for the Future of U.S. High Energy Physics. At a meeting at SLAC June 24-26, the subpanel heard presentations on the SLAC program, including the *B* factory and the International Linear Collider, as well as on LBNL activities and non-accelerator experiments. At its meeting at Fermilab on August 11-14, the subpanel heard about the Fermilab and ANL HEP programs, as well as plans for R&D on muon colliders and a low-field very large hadron collider (VLHC). At its Brookhaven meeting on September 18-21, the subpanel heard presentations about the CESR/CLEO and BNL HEP programs, a high-field VLHC, the U.S. contributions to the LHC and its detectors, as well as possibilities for *K* experiments at both Fermilab and Brookhaven. All three meetings included a community forum.

A portion of the subpanel headed by Abe Seiden is concentrating on issues related to the university program. They have received input from the community during meetings at the University of California at Berkeley, the University of Chicago, and the State University of New York, Stony Brook. Many comments have already been received by the subpanel on this and other topics via the mailbox futurehep@hepnrc.hep.net. The subpanel encourages members of the community to send any additional comments to the mailbox.

A five-day session to prepare the subpanel's report is scheduled for November 5-9 in Reston, VA. The final report will be presented to HEPAP in February, 1998.

(The charge, membership and other information on the subpanel is available from the DOE HEP home page, at http://www.hep.net/doe-hep/home.html.)

NSF Director for Mathematical and Physical Sciences

On September 8, Robert Eisenstein became the Director for Mathematical and Physical Sciences at the National Science Foundation. Paul Grannis sent him the following letter on behalf of the DPF:

On behalf of the Executive Committee of the Division of Particles and Fields, I congratulate you on your appointment as Director for Mathematical and Physical Sciences at the National Science Foundation.

Over the past five years, the particle physics community has benefited from your insights and distinguished efforts as Director of the Physics Division. We appreciate the outstanding opportunities for first class physics that you have initiated, including the CESR and CLEO upgrades, new studies of cosmic rays and the search for gravitational waves. The central role you played in helping to secure the opportunity for strong U.S. participation in LHC experiments is widely appreciated. Your personal efforts to bring this into being were crucial.

Those of us in the DPF particularly appreciate that the NSF has continued its strong support of the investigation of the fundamental properties of matter in difficult fiscal times. It is a significant accomplishment that this support has directly resulted in so many signal achievements over the past several years - from the detailed understanding of *b*-quark processes; through studies of ultra high energy cosmic rays, elucidation of the unified electroweak force, and discovery of the top quark; to the development of exciting new theories of particle symmetries and the structure of space-time. You and the Foundation have every right to be proud of these achievements.

On behalf of our many colleagues in the DPF, we wish you success in your new position and look forward to our continuing and rewarding interaction with you.

ITP Scholars

The Institute for Theoretical Physics in Santa Barbara is introducing a new program of visiting researchers in theoretical physics. The purpose of this program is to support the research efforts of faculty at U.S. colleges and universities that are not major research institutions. Applicants from non-Ph.D.-granting institutions and from institutions with greater emphasis on teaching (as measured, for example, by teaching load) are particularly encouraged. Ongoing research activity is also a criterion.

Each award funds a total of three round trips and up to six weeks of local expenses, to be used over a period of up to three years. The ITP intends to make up to ten awards in 1998.

In 1998 the ITP will run programs in the Spring on Dualities in String Theory and Bose-Einstein Condensation and in the Fall on Disorder and Interactions in Quantum Hall and Mesoscopic Systems and Electrostatic Effects in Complex Fluids and Biophysics. More details concerning these programs and other aspects of the ITP can be found at http://www.itp.ucsb.edu/.

Scientists interested in this program should send a vita together with a statement describing their research interests to Professor David Gross, Director, Institute for Theoretical Physics, University of California, Santa Barbara, CA 93106-4030, or by email to scholars@itp.ucsb.edu, before November 1, 1997. They should also solicit at least one letter of recommendation. Awards will be announced by December 15, 1997.

NSF Special Emphasis Panel on Theoretical Physics

The Physics Division of the National Science Foundation has convened a set of Special Emphasis Panels to provide advice on its various programs. The NSF has recently released the report of the Special Emphasis Panel on Theoretical Physics. The panel was chaired by Bob Sugar; its report is available at http://www.nsf.gov/mps/phy/thsep.html.

The Panel was asked to provide advice on the scientific directions of the program, the balance between the support of new young investigators and proven active senior ones, the balance between support of individuals and facilities, and the appropriate levels of student and postdoc support.

The Panel found the program to be very strong. However, when the effects of inflation are taken into account, its spending power declined by approximately 25% between 1992 and 1997. The Panel concluded that fiscal stringencies have clearly taken a toll, and expressed concern that a continuation of the present trend will do serious damage to the program, and with it to the U.S. physics enterprise.

As of last fall, the NSF theory program supported 251 faculty scientists, 86 postdoctoral research associates and 139 graduate students. Approximately 7% of the faculty scientists are new to the program each year. The Panel believed that these figures represent a reasonable balance in the support of graduate students, postdocs and new principal investigators. The Panel indicated that it is vital that scientists at the beginning of their careers be brought into the program as principal investigators on a regular basis, and it supported the strenuous efforts of the Program Officers to do so, even if in the current fiscal climate, this must be done at the expense of more established scientists.

The Panel found the mix of topics currently supported by the NSF program to be excellent; however, as has always been the case, it expected that the topics will change over time in response to changing opportunities. The Panel noted that research which cuts across the traditional programmatic or divisional boundaries of the NSF has become increasingly important. Because of its breadth, the Theoretical Physics program is in a particularly good position to take advantage of opportunities in inter-disciplinary research.

Finally, the Panel concluded that a major reason for the continued strength of the Theoretical Physics program in these very difficult times is the outstanding leadership it has received from its dedicated Program Officers.

Physical Review D

Physical Review D is changing its production process from a batch mode that focussed on production of a printed issue to an article-by-article mode in which the electronic version of the journal is primary. Under the new procedures, the PDF and PostScript files of each article will be posted as part of the electronic journal shortly after the author has approved the page proofs. This will be the final form of the article, and the date of electronic posting will be listed as the publication date of the article, rather than the date on which it appears as part of a printed issue.

In the first phase, beginning with articles that will be printed on January 1, 1998 (i.e., all articles accepted for publication after September 22, 1997), full citation information (volume and page number) will only be available when all the articles corresponding to a given print issue are posted. In the second phase, beginning with articles that will be printed on July 1, 1998, the journal will change to a citation scheme based on volume and article number, with the article number being assigned at the time that the article is published electronically. In this way papers will be fully citable as soon as they appear in the online journal. In the printed journal, articles will be ordered by increasing article number; the algorithm for assigning these numbers has been designed so that this results in the same ordering by subject as at present.

There are two important implications of this change. First, because the articles will be published electronically as soon as they are ready, authors can reduce the time to publication by carefully preparing and proofreading their manuscript, submitting it electronically, and returning the page proofs (or sending a message approving the proofs) promptly. Second, because the online version will be viewed as the final published version, authors will not be able to make any corrections to the article after the page proofs have been returned; instead, any further corrections must be made by submitting an erratum.

Physical Review Letters

An enhanced version of PRL online was released on August 14. The HTML abstract of the new version offers links from article references to abstract databases (and, when feasible, links from the abstract to the cited article itself) as well as links to articles editorially related to the one being viewed (Comments, Replies, Errata, or paper I--paper II series). PostScript files of the published articles are now available in addition to the PDF files. Other enhancements include direct links to full articles from the HTML Table of Contents.

Individuals whose institutions subscribe to the online versions of PRL should have full

access to these features. If an institution has a print subscription and wishes to receive the online version, the librarian should contact the APS Associate Publisher at assocpub@aps.org.

An APS member may obtain an individual one-year online-only subscription to PRL for $25. An APS member with a subscription to the paper version of PRL may obtain a free individual subscription to the online version. APS members should contact the APS Membership Department at membership@aps.org to subscribe.

Journal of High Energy Physics

A new electronic journal, the Journal of High Energy Physics (JHEP), has just been announced. The Journal is intended to be a scientific journal written, run and distributed by electronic means. It seeks to guarantee the same high standard of present-day journals at a much lower cost. It aims to expand upon the present archive system of preprint distribution through an automated and electronic version of the refereeing procedure.

During its start-up phase, the Journal is being supported by ICTP, INFN and SISSA. CERN is acting as sponsor, and the Societa Italiana di Fisica will provide a printed version of the journal. The Journal will be available on the internet, as well as in printed and CD-ROM versions to any subscribing library or individual.

The Advisory Board consists of J. Cardy, S. Deser, R. Gatto, D. Gross, L. Okun, G. Parisi, G. 't Hooft, S. Weinberg and E. Witten. The Journal can be accessed at http://jhep.mse.jhu.edu/ or at mirror sites worldwide.

1998/99 Divisional Meeting

The 1998/99 Divisional Meeting of the DPF will be held in Los Angeles, January 6-9, 1999. Registration will take place on the evening of January 5. DPF 99 will cover all current topics in experimental and theoretical elementary particle physics, as well as related areas such as astroparticle physics, heavy ion physics and instrumentation and experimental techniques.

The meeting is being hosted by UCLA, with Caltech, USC, and the Universities of California at Santa Barbara, Irvine, Riverside and San Diego serving as co-hosts. More information will be available soon.

Anyone interested in hosting the 2000/2001 DPF meeting should contact the DPF chair.

Particle Data Group

The Particle Data Group has announced that the 1997 WWW updates of its particle listings are now available. The review articles will be updated in November 1997. The updates can be accessed at http://pdg.lbl.gov/ or one of its mirrors.

The PDG has made its educational website, The Particle Adventure, available in English and Spanish. The site can be reached at http://pdg.lbl.gov/cpep/ or one of the PDG mirrors..

Directory and Survey of Particle Physicists

A *Directory and Survey of Particle Physicists* was prepared by the Particle Data Group and is now available on the web at http://pdg.lbl.gov/us-hepfolk. Figures and tables summarize the results of the 1995 census/survey.

The online directory has a searchable listing of all U.S. high energy physicists, including their addresses, phone numbers, and email addresses. The online directory will be updated on a continuing basis.

The directory and survey are also available as a report (DOE/ER-0699) from the DOE Division of High Energy Physics (while copies last). If you would like a copy, please contact Donna Sier at ER-222, U.S. Department of Energy, 19901 Germantown Road, Germantown, MD 20874-1290, or by email at donna.sier@oer.doe.gov.

LBNL Supercomputer Resources

Starting October 1st, the online supercomputer resources at the Lawrence Berkeley National Laboratory will triple to nearly 1/2 teraflop and 100 terabytes. Proposal forms for DOE-funded researchers are available at http://www.nersc.gov.

Proceedings of the Sixth International World-Wide Web Conference

In April 1997, SLAC and Stanford University co-hosted the Sixth International World-Wide Web Conference. This was the latest in a series of academic conferences devoted to WWW research. Information on the conference can be found at http://www6conf.slac.stanford.edu/.

Given the importance of WWW to the High Energy Physics community, SLAC is offering to provide other HEP institutions with copies of the conference proceedings free of charge, in either the CD-ROM or paper version (or both if desired). Please contact Bebo White at bebo@slac.stanford.edu.

Electronic Issues

The DPF is now communicating with its members by email. If you have not received any communications, it means that you have an obsolete email address on file with APS.

You can update your email address on-line from the APS home page, http://www.aps.org/. The userid for the Online Member Directory Search is "directory," and the password is "F=ma." Please be sure to use a valid internet address. Do not use

bitnet or hepnet/decnet.

The DPF Executive Committee welcomes comments and suggestions from all DPF members, so as to be able to better represent the interests of those engaged or interested in high energy physics. Electronic messages may be sent to the current chair at pgrannis@sunysb.edu.

Last modified 1 October 1997