

DPF NEWSLETTER - January 15, 1994

To: Members of the Division of Particles and Fields

From: Robert N. Cahn, Secretary-Treasurer, rncahn@lbl.gov

Letter from DPF Chairman Mike Zeller: LHC Meeting at Fermilab

Dear Colleague,

In view of the demise of the SSC, the possible involvement of U.S. physicists in high-Pt physics at the Large Hadron Collider (LHC) at CERN becomes an issue of immediate importance. At the suggestion of some of the physicists who were expecting to pursue this area of physics at the SSC, the DPF has agreed to sponsor a workshop to explore the prospects for U.S. collaboration in the machine and in the two high-Pt detector projects (ATLAS and CMS). As chairman of the DPF, I am writing to invite you to this workshop, which will be held in the Fermilab Auditorium on February 15 and 16, starting at 9:00 AM on Tuesday.

The members of the organizing committee for this workshop are G. Trilling (LBL -- chairman), F. Gilman (SSCL), D. Green (Fermilab), L. Sulak (Boston U./Saclay), and W. Willis (Columbia).

The agenda is not yet finalized, but a preliminary draft version is appended below. It includes presentations describing the LHC and the two high-Pt detectors - CMS and ATLAS, discussion of physics opportunities, and views from CERN management, DOE and HEPAP. The workshop will also serve as an opportunity for the community to express its interest in this pursuit (an interest that will provide input to both the HEPAP subpanel on the future of U.S. High Energy Physics and to the DPF study), and as a possible point of origin of a U.S. LHC user group.

In order to have a point of focus for a possible U.S. collaboration with the LHC detector and accelerator groups, it has been suggested that a U.S. LHC user group be formed, and that such a group begin through discussions at the workshop. Here the term "user" is intended to include both those individuals interested in doing experiments at the LHC and those interested in collaborating on the R&D and construction of the collider. On the assumption that such a group would be useful, I have asked George Trilling to serve as its Acting Chairman. His role would be to organize the group at the beginning, act as its spokesman until formal elections were held, and organize such elections.

As noted above, one function of the workshop is to determine the community's interest in collaborating with the CERN groups on the LHC machine and on the two high-Pt detectors. Since not all interested people will be able to attend, we invite those who cannot come, but wish to express their views by E-mail, to send them to the following

address LHC_WORKSHOP@LBL.GOV.

Individuals interested in attending this workshop should request a pre-registration packet from Ms. Barbara Kristen, E-mail FNAL::KRISTEN, fax (708) 840-4610.

Sincerely,

Mike Zeller, Chair, DPF

Draft Agenda: LHC Meeting, Fermilab, February 15 - 16, 1994

Feb. 15

Chairperson -- M. Zeller
8:00 Registration
9:00 Welcome from Fermilab (Peoples or Stanfield)
9:10 Introduction and Purpose of Meeting (Willis)
9:30 Status of LHC (including opportunities for NMS participation)
10:30 Break
11:00 Physics Opportunities (Hinchliffe, Paige)
12:00 Lunch
1:30 ATLAS Project
3:00 Break
3:30 CMS Project
5:00 DPF Activities in the Area (Zeller or Peccei)
5:30 General Discussion
6:00 Adjourn

Feb. 16

Chairperson -- Fred Gilman
8:30 CERN Position
9:00 DOE View (O'Fallon)
9:30 HEPAP Subpanel plans (Drell or substitute)
10:00 Break
10:30 Report from U.S. participants in ATLAS meeting
11:00 Report from U.S. participants in CMS meeting
11:30 Discussion
11:45 Some possibilities for CERN-U.S. collaboration in LHC magnet development (Limon)
12:15 Discussion
12:30 Lunch
2:00 Discussion of formation of U.S. LHC Users Group and other organizational issues\\
4:00 Adjourn

HEPAP Subpanel Established

In response to a request from Secretary of Energy Hazel O'Leary, HEPAP has established a subpanel. Prof. Sid Drell, the Chairman of the subpanel, has already written to the full membership of the DPF, stating, in part "I am inviting your thoughts whether conveyed by individual or group letter, e-mail (brose@slacvm.bitnet) or faxes (415-926-4500). I assure you that we will give them serious consideration as we undertake our task." The subpanel has asked the DPF to organize a series of town meetings, to be held at various locations around the country, to provide input to the subpanel's work.

The membership of the subpanel is:

Sid Drell, Chairman (SLAC)
Jonathan Bagger (Johns Hopkins)
Pat Burchat (UCSC)
Dave Burke (SLAC)
Joel Butler (Fermilab)
Helen Edwards (Fermilab)
Kevin Einsweiler (LBL)
Val Fitch (Princeton)
Lorenzo Foa (CERN)
John Huth (Harvard)
Dan Kleppner (MIT)
Akihiro Maki (Japan)
Bill Marciano (BNL)
Jack Ritchie (Univ. of Texas, Austin)
Bernard Sadoulet (UC Berkeley)
Maury Tigner (Cornell)
Roberto Peccei (UCLA, *ex off.*)
Stan Wojcicki (Stanford, *ex off.*)
Mike Zeller (Yale, *ex off.*)

DPF Sponsors Long-Term Planning Study

At the meeting of the DPF Executive Committee Dec. 4, 1994, it was decided that the most useful role the DPF could play in the re-evaluation of the high energy physics program in the U.S. was to sponsor a series of working groups. Outgoing Chairman of the DPF, Roberto Peccei has written to the members of the Division:

Each working group is charged to articulate the broad range of physics questions that exist in their area, to discuss the means by which these questions might best be addressed, and to relate these means to the exploitation of existing and future facilities, both in the USA and in the rest of the world. Within their area each working group should arrive at a set of priorities, under some sensible constraints. In addition, the working groups should try to indicate the perceived priority of their physics area in the context of the total high energy physics program.

So as to be helpful to the HEPAP process, the plan for this activity is that from January through April the working groups will operate mostly through electronic mail and small group meetings. At the beginning of May, the working groups will convene in the Washington area for a workshop to present a preliminary assessment of their findings. A more full assessment will be provided at the DPF meeting in Albuquerque in August. A final written report of the working groups is aimed for January 1995.

The current line-up of working groups and convenors is given below. You are encouraged to submit your thoughts by e-mail to appropriate convenors.

1. *Tests of the Electroweak Theory*
 - Frank Merritt (University of Chicago)
 - Alberto Sirlin (New York University)
 - Morris Swartz (SLAC)
2. *Flavor Spectroscopy*
 - John Cumalat (University of Colorado)
 - Estia Eichten (Fermilab)
 - Ed Thorndike (University of Rochester)
3. *QCD*
 - Al Mueller (Columbia University)
 - Berndt Muller (Duke University)
 - Wesley Smith (University of Wisconsin)
4. *CP Violation and Flavor Issues*
 - Helen Quinn (SLAC)
 - Michael Schmidt (Yale University)
 - Yau Wah (University of Chicago)
5. *Neutrinos*
 - Paul Langacker (Univ. of Pennsylvania)
 - Gina Rameika (Fermilab)
 - Hamish Robertson (LANL)
6. *Electroweak Symmetry Breaking*
 - Sally Dawson (Brookhaven Natl. Lab.)
 - Howard Haber (Univ. of California at Santa Cruz)
 - Jim Siegrist (SSCL)
 - Tim Barklow (SLAC)
7. *Astroparticle Physics and GUTS*
 - Michael Turner (Univ. of Chicago/Fermilab)
 - Frank Wilczek (Institute for Advanced Study)
8. *New Accelerator Techniques*
 - Convenors to be announced
9. *Structural Issues in the US High Energy Physics Program*
 - Chip Brock (Michigan State University)
 - Stew Smith (Princeton University)
 - Bob Cahn (LBL)

DPF 94 at University of New Mexico

DPF 94 will be held August 2 - 6, 1994 at the University of New Mexico in Albuquerque. Directly following, on August 7, the DPF Working Groups on Long-Term Planning will present their reports. Registration packets and full information can be obtained by contacting the DPF 94 Coordinator, Dept. of Physics and Astronomy, Univ. of New Mexico, Albuquerque NM 87131 (dpf94@unmb.unm.edu).

Obtaining HEPAP/DPF Information Electronically

You can obtain more information on the HEPAP subpanel and associated DPF activities through internet, using gopher service or anonymous ftp.

Gopher: The document will be inside the UCLA Physics Department gopher server under Department information/DPF. To get the document, please use the built-in mail function. The Physics Department server is listed on the UCLA, UC and Physics Department world-wide gopher server. Or it can be connected directly via the internet address: <gopher.physics.ucla.edu> (alias of <newton.physics.ucla.edu>).

Anonymous ftp: The same document will also be inside the /usr/data/pub/DPF in the Physics Department anonymous FTP server, which has the internet address: <kepler.physics.ucla.edu> (128.97.23.45). Please ftp to <kepler.physics.ucla.edu> and log in as *anonymous*. Use your complete e-mail address as the password.

DPF Elections

Frank Sciulli was elected Vice-Chair of the DPF. Sally Dawson and Mike Shaevitz were elected to the Executive Committee. The current roster of the DPF Executive Committee and the final year of their terms is

Chair: Mike Zeller (1994)

Chair-Elect: David Cassel (1994)

Vice-Chair: Frank Sciulli (1994)

Past Chair: Roberto Peccei (1994)

Secretary-Treasurer: Bob Cahn (1994)

Division Councillor: Barry Barish (1994), Anne Kernan (1995)

Executive Board: Sally Dawson (1996), Lina Galtieri (1994)

Tom Kirk (1994), Vera Luth (1995)

Michael Shaevitz (1996), Bruce Winstein (1995)

Next year Cassel will succeed Zeller, Sciulli will succeed Cassel. A new Vice-Chairman and Secretary-Treasurer will be elected. One Division Councillor and two regular members of the Executive Committee will be elected, as well.

New APS Fellows

New APS Fellows in the Division of Particles and Fields have been announced. The Executive Committee has decided to make the presentation of certificates at the Annual Meeting rather than the Washington meeting, so that more of the new Fellows colleagues will be present for the award. The new Fellows are

Carl W. Akerlof
Julius Kuti
R. Michael Barnett
Joseph T. Lach
Donald G. Coyne
Catherine B. Newman-Holmes
Melissa E. B. Franklin
Harold O. Ogren
Howard Georgi
Abdus Salam
Giorgio M. Giacomelli
James Siegrist
Howard Haber
Pierre Sikivie
Lawrence J. Hall
Sheldon L. Stone
John A. Jaros
Johann A. Wagner

Prize and Business Meetings in Washington

The APS announced that Prof. Lee Pondrom of the University of Wisconsin and Prof. Tom Devlin of Rutgers have been jointly awarded the 1994 W.K.H. Panofsky Prize

For their elegant series of strange-baryon experiments at Fermilab. They discovered that contrary to expectations hyperons are produced polarized in hadron collisions. This allowed them to make precise measurements of the hyperon magnetic moments, thus providing important data for understanding the strong interaction in the static limit.

Prof. Yoichiro Nambu of the University of Chicago has been awarded the J.J. Sakurai Prize for 1994

For his many fundamental contributions to field theory and particle physics, including the understanding of the pion as the signaler of spontaneous breaking of chiral symmetry.

The Panofsky and Sakurai Prizes will be awarded at the Washington Meeting, on Thursday, April 21, 1994. The DPF Business Meeting will be held directly following, and in the same location as, the Prize Session, which begins at 2:30 pm. The agenda will include a discussion of long-term planning issues, as well as regular business topics.

High-Energy Physics in Reviews of Modern Physics

Beginning January 1, 1994, particles and fields will be represented in *Reviews of Modern Physics* by two Associate Editors. Persis Drell of Cornell University and William J. Marciano of Brookhaven National Laboratory succeed Chris Quigg of Fermilab, who has served since 1981 as Associate Editor for high-energy physics, particles, and fields.

Persis Drell received her Ph.D. from UC Berkeley in 1983, measuring atomic parity violation. Subsequently she was a postdoc at LBL working on Mark II at the SLC. She joined the Cornell faculty in 1988, and has been working on CLEO since then.

Bill Marciano took his Ph.D. at New York University in 1974. After six years at Rockefeller University and a year on the faculty at Northwestern, he joined the High-Energy Theory Group at Brookhaven, where he is now Group Leader. Marciano is well known for his work on electroweak interactions and on grand unification.

Reviews of Modern Physics seeks to present comprehensive, scholarly reviews of topics that are--or should be--of interest to a broad range of physicists. The editor and associate editors strongly encourage prospective authors to correspond with them in advance of submitting an article.

A relatively new section of *Rev. Mod. Phys.* is the Colloquium. As its title suggests, it is intended to present briefer articles at the level of a department colloquium. Submissions or suggestions for topics or authors are welcomed at rncahn@lbl.gov.

Snowmass 94

The Division of Astrophysics, the Division of Nuclear Physics, and the Division of Particles and Fields of the American Physical Society will sponsor a two-week Summer Study covering topics in astrophysics and cosmology that are intimately related to particle and nuclear physics. The Summer Study will be held in Snowmass, Colorado, from Wednesday, June 29, 1994 to Thursday, July 14, 1994. The Summer Study's title "Particle and Nuclear Astrophysics and Cosmology in the Next Millennium" is meant to reflect the hope of the organizers that what will be discussed at Snowmass are future directions for this broad interdisciplinary area.

The Summer Study will follow the format of the successful series of Summer Studies undertaken by the DPF in the 1980's to evaluate the future course of the U. S. high energy physics program. The Summer Study will start with a day and a half of plenary talks, reviewing critical areas in particle and nuclear astrophysics and cosmology. After that, the participants will split up into working groups and subgroups which will be led by one or more convenors. At the end of the Summer Study, these convenors will summarize the findings of their respective working groups in a final plenary session. A list of the working groups envisaged at this stage, along with their convenors, is listed below. For information on registration and accommodations, contact Ms. Cynthia Sazama

SAZAMA@FNALV.FNAL.GOV).

Snowmass 94 Working Groups

1. *Neutrinos* - Wick C. Haxton (University of Washington)
 - Neutrino Masses: Boris Kayser (NSF) & Hamish Robertson (LANL)
 - Neutrino Oscillations: Neville W. Reay (Kansas State U.) & Lincoln Wolfenstein (Carnegie-Mellon U.)
 - Solar Neutrinos: John Bahcall (IAS), Ken Lande (U. of Pennsylvania), & S. Peter Rosen (UT, Arlington)
 - Neutrino Astrophysics: David Cline (UCLA), George Fuller (UCSD), & Francis Halzen (U. of Wisconsin)
2. *Cosmic Rays* - James Cronin (U. of Chicago) & Carl Fichtel (NASA/Goddard)
 - Space-Based Gamma Ray Astronomy: Gerald Fishman (NASA/Huntsville) & Joshua Grindlay (Harvard U./CfA)
 - Ground-Based Gamma Ray Astronomy: Richard Lamb (Iowa State U.) & Rene Ong (U. of Chicago)
 - Over the Knee: Todor Stanev (Bartol Inst.) & Simon Swordy (U. of Chicago)
 - Highest Energy Cosmic Rays: Pierre Sodolsky (U. of Utah) & Alan Watson (Leeds)
3. *Gravitational Phenomena* - Kip Thorne (Caltech)
 - Quantum Aspects - Black Holes and Cosmology: L. Thorlacius (UCSB) & Valery Frolov (U. of Alberta)
 - Black Hole Astrophysics: Elliot Bloom (SLAC) & Igor Novikov (NORDITA)
 - Gravity Waves: Leonid Grishchu (Washington U.)
4. *Low Background Experiments* - Bernard Sadoulet (UC, Berkeley)
 - Proton Decay: Henry Sobel (UC, Irvine)
 - Dark Matter: Brian Dougherty (Stanford U.), Charles Alcock (LLNL), & Leslie Rosenberg (MIT)
 - Other Underground Experiments: Frank Avignone (U. of South Carolina)
5. *Cosmology* - Ed Bertschinger (MIT) & Edward Kolb (Fermilab/U. of Chicago)
 - Inflation: Joshua Frieman (Fermilab) & Paul Steinhardt (U. of Pennsylvania)
 - Baryogenesis: Andrew Cohen (Boston U.) & Larry McLerran (U. of Minnesota)
 - Nucleosynthesis: Grant Mathews (LLNL) & David Schramm (U. of Chicago)
 - Cosmic Background Radiation: Stephan Meyer (U. of Chicago), George Smoot (LBL), & Edward Wright (UCLA)
 - Structure Formation: Joel Primack (UCSC) & Alex Szalay (Johns Hopkins U.)
 - Observational Cosmology: Marc Davis (UC, Berkeley) & Richard Kron (Fermilab/U. of Chicago)

Last modified 25 November 1995