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International Committee for Future Accelerators
Sponsored by the Particles and Fields Commission of IUPAP

**Seminar
on**

FUTURE PERSPECTIVES
in
HIGH ENERGY PHYSICS

Brookhaven National Laboratory
October 5-10, 1987

**PROGRAM
AND
GENERAL
INFORMATION**

SEMINAR REGISTRATION AND CENTER OF ACTIVITIES

Registration is at the Seminar Desk in Berkner Hall on Monday, October 5, from 10:00 a.m. to 10:00 p.m. and on Tuesday, October 6 starting at 8:00 a.m. All sessions of the Seminar will take place at Berkner Hall.

Seminar Desk

Horst Foelsche, BNL W. Owen Lock, CERN
Pat Tuttle, BNL Helga Schmal, CERN
Rae Bailey, BNL
Pam Campbell, BNL

Telephone number at the Seminar Desk:
(516) 282-3547 or BNL Ext. 3547

8:00 a.m. - 6:00 p.m.

The name tag included in the registration folder should be used as identification for reentry to the Brookhaven National Laboratory (BNL) site, for use at the BNL Swimming Pool, or for currency exchange and check cashing at the local on-site bank or by the BNL Cashier.

MESSAGES AND INSTRUCTIONS SHOULD SOMEONE WISH TO CONTACT YOU

A message board will be located near the Seminar Desk in Berkner Hall. Please check the board periodically during the sessions.

If someone wishes to contact you at BNL, the following may be useful:

Address:

ICFA Seminar
Berkner Hall
Brookhaven National Laboratory
Upton, Long Island, New York 11973 U.S.A.

Seminar Desk: (516) 282-3547
Telex: 6852516 BNL DOE
TWX: 510-228-1291
CABLE ADDRESS: BROOKLAB UPTONNY
FACSIMILE: (516) 282-3000

The BNL Communications Center will bring messages for Seminar participants to Berkner Hall where they will be distributed.

TELEPHONES

When making a telephone call from your accommodations refer to the Telephone Service Information Card located by the phone. Toll charges for calls will be mailed to participants at a later date.

There are public telephones in the residence dorm, Berkner Hall and the Brookhaven Center.

The Laboratory telephone operators are on duty from 8:00 a.m. to 6:30 p.m. Monday through Friday.

The Federal Telecommunication System (FTS) may be used for calls to other U.S. Government facilities: these calls and those to locations near the BNL site can be made from special phones near the Seminar Desk.

SECRETARIAL ASSISTANCE

If you have need for typing, copying or preparation of material for talks, you should request assistance at the Seminar Desk. There is a copying machine available at Berkner Hall.

ORGANIZATION OF SLIDES FOR TALKS

The Berkner Hall Auditorium has facilities for projecting material prepared in the following formats:

Overhead transparency film
2 inch by 2 inch slides from 35 mm film

Speakers are invited to check out their presentations ahead of time in Room A at Berkner Hall. Herb Lutz at the Seminar Desk or in Room A is responsible for collecting slides so that they may be arranged in projector carousels.

Please notify the Seminar Desk if you have any special requirements for your talk.

DISTRIBUTION OF PREPRINTS

Each day of the Seminar, packets of preprints will be distributed before the morning session. These packets will contain preprints from the speakers making presentations on that day in the approximate order in which they are to be presented.

Preprints will be available in Room D of Berkner Hall, adjacent to the Seminar Desk.

ON-SITE SHUTTLE BUSES

Shuttle buses will be available to transport Seminar participants from the BNL housing areas to Berkner Hall during the Seminar hours. Look for white vans with "ICFA" signs in the windows. The shuttle service will be available each day as follows:

7:15 a.m. — 9:15 a.m.
12:00 p.m. — 2:15 p.m.
5:00 p.m. — 6:30 p.m. except Saturday

The shuttle will also be available for all special events listed in the program.

If you need on-site transportation when the Seminar sessions are in progress, a van can be called. Please contact the Seminar Desk for assistance.

MEALS

Specifically planned for the Seminar are the following meals: A light supper for registrants on Monday, 4-10 p.m., the Reception/Buffer on Tuesday evening, 6:00 p.m., and the Banquet on Thursday evening, 6:30 p.m. as shown on the Program.

Meal tickets for the Reception/Buffer and Banquet are included in the registration folder. Guest tickets may be obtained at the Seminar Desk, before 4:30 p.m. on Tuesday, October 6.

Please notify the Seminar Secretary in advance if you have any special dietary requirements.

At other times meals may be purchased at the BNL Cafeteria, located in Berkner Hall, as follows:

Breakfast:	7:30 a.m. — 10:00 a.m.
Lunch:	11:15 a.m. — 1:30 p.m.
Dinner:	5:00 p.m. — 6:30 p.m.

The grill at the BNL Cafeteria is open from 7:30 a.m. to 10:00 a.m. and 11:15 a.m. to 6:30 p.m. Monday through Friday.

Saturday and Sunday hours for Cafeteria service are 9:00 a.m. to 2:00 p.m.

The Brookhaven Center is open Sunday through Friday (closed Saturday) for light meals and bar service from 5:00 p.m. to 11:15 p.m. The Brookhaven Center building closes at 11:30 p.m.

SPECIAL TOURS OF BNL LABORATORY FACILITIES

A tour of the SSC magnet construction and the site of the proposed RHIC project is offered on Friday afternoon, October 9, departing from Berkner Hall at 1:45 p.m. This tour will also include a review of some experimental equipment being constructed for the D0 experimental area at the Tevatron.

Those wishing to visit other BNL facilities or activities, such as the National Synchrotron Light Source and the BNL Instrumentation Division, should contact the Seminar Desk early, so that arrangements can be made.

If enough interest is shown, a few off-site leisure tours are planned. Please review the Optional Tours material in the registration folder and sign up by the requested time so these tours can be finalized.

In addition a special tour can be arranged for the BNL Exhibit Center with approximately one-day notice. Please indicate your interest at the Seminar Desk. This tour requires approximately 2 hours and offers a very general description of the research activities at BNL and a history of Camp Upton which occupied the laboratory site during World Wars I and II.

CONCERT

You will find courtesy tickets for the Wednesday evening concert by The Composers String Quartet in your registration folder. You must present this ticket for admission.

TRAVEL ARRANGEMENTS

If you have travel reservations to be confirmed, please complete the pink form contained in the registration folder and return it to the Seminar Desk. Requests for limousine transportation to the airports should be coordinated through the Seminar Desk.

We suggest that you visit the Travel Office if you have complex travel arrangements that cannot be made through the Seminar Desk. The BNL Travel Office is located at 2 Center Street, a 5-minute walk from Berkner Hall. The Travel Office can offer helpful suggestions and book airline or hotel reservations for you, including a visit to New York City.

CHECKOUT FROM BNL HOUSING

Checkout from BNL housing must be done before 3:00 p.m. on the day of your departure. You may do this at the Seminar desk. If you are leaving on the last day of the Seminar, Saturday, October 10, it is suggested that you bring your room key and luggage with you to Berkner Hall. If you are departing after 5:00 p.m. or on Sunday you should leave your key at Security (Police Headquarters), Building 50.

SHOPPING NEAR BNL

There are several large shopping areas within reasonable driving time (about 30 minutes) from the BNL site. Ask at the Seminar Desk for suggestions and directions.

RESTAURANTS

Included in your registration folder is a restaurant list for those who wish to dine off-site. We have a selection of menus from many of these restaurants, as well as directions and maps available at the Seminar Desk.

There are fast food restaurants in the immediate vicinity of the Laboratory: Roy Rogers and Guido McMurfi's in Shirley, and a McDonalds in Coram (see enlarged Long Island map in lobby of Berkner Hall).

CURRENCY EXCHANGE AND CHECK CASHING

Barclays Bank, located in Building 193 at 2 South Technology Street, will exchange foreign currency. It is open between 10:00 a.m. and 3:00 p.m., Monday through Friday. A brisk 10-minute walk is required to reach Barclays Bank from Berkner Hall. The bank will be able to give you U.S. Dollars for foreign currency from the following countries: Australia, Austria, Belgium, Canada, England, Federal Republic of Germany, France, Italy, Japan, Mexico, Norway, Spain, Sweden, Switzerland, and The Netherlands. However, there is a 1% charge for conver-

sion to U.S. Dollars and Barclays Bank charges a fee of \$7.50 for each bank draft, money order or travelers check drawn on a non-U.S. bank.

Barclays Bank, the BNL Cafeteria, and the bar at the Brookhaven Center will accept U.S. travelers checks.

ATHLETIC FACILITIES

The BNL indoor Swimming Pool, located in Building 478 at 5 Center Street, is open for use from 5:00 p.m. to 9:30 p.m. This is about a 5-minute walk from Berkner Hall. Show your Seminar name tag to gain admission without charge. Located adjacent to the Pool is a Gymnasium with weight room. The locker rooms in Building 478, used for the Pool and Gymnasium, are available for your use.

The BNL Parcourse Circuit is an outdoor exercise trail located in a pine woods setting. See the pamphlet included in the registration folder for a more complete description. It is recommended that this facility be used in the company of another person, for safety reasons.

U.S. POST OFFICE

The U.S. Post Office in Building 179 at 2 Center Street is open Monday-Friday, 8:00 a.m. to 4:45 p.m. This is a 5-minute walk from Berkner Hall.

RESEARCH LIBRARY

The Research Library, located in Building 477 at 25 Brookhaven Avenue (very near Berkner Hall), is open every day from 8:30 a.m. until as late as anyone wishes to use the facilities. If it is closed, you can ask Security to open the building at any hour; call them on BNL Ext. 2238 and show your ICFA Seminar name tag as identification to the guard who will meet you at the building.

AUTOMOBILE SERVICE STATION

The Gulf Service Station located in Building 630 at 14 Rochester Street is open Monday-Friday, 8:00 a.m.-6:00 p.m. They sell gasoline and perform all types of automobile services.

EMERGENCIES OR OTHER PROBLEMS

ON- OR OFF-SITE

If you should require medical assistance during the day, contact the Seminar Desk.

If you encounter any problems during your stay when the Seminar Desk is not staffed, assistance can be obtained through BNL Police Headquarters as follows:

On-Site Emergencies:
BNL Ext. 2222

Other Problems:
(516) 282-2238 or BNL Ext. 2238

The BNL Police will have the home phone numbers of the BNL Local Organizing Committee members if they should be contacted for assistance.

NOTES

NOTES

PROGRAM COMMITTEE

Y. Yamaguchi (ICFA Chairman)	W.O. Lock (ICFA Secretary)
Y. Ado	J. Sacton
G. Brianti	N. Samios
N. Dikansky	J. Sandweiss
T. Ekelof	H. Schopper
J. Ellis	D. Shirkov
H. Foelsche	A. Skrinsky
S-X Fang	V. Soergel
D. Kiss	K. Strauch
B. McDaniel	V. Telegdi
E. Myae	A. Vorobiev
L. Pondrom	

ORGANIZING COMMITTEE

H. Foelsche (Local Chairman)	W.O. Lock (ICFA)
P. Tuttle (Seminar Secretary)	H. Schmal
P. Baggett	
P. Dahl	
A. Greene	
H. Kinney	

SEMINAR SPONSORS

ICFA and the Particles and Fields Commission
of IUPAP
U.S. Department of Energy
National Science Foundation
Associated Universities, Inc.

SEMINAR PROCEEDINGS

It is planned to issue the Seminar Proceedings as promptly as possible. One copy will be sent to each registered participant. It will be mailed to the address shown on the back of your registration folder. Please notify the Seminar Desk if you wish to change that address.

Extra copies of the Proceedings can be obtained from the National Technical Information Service approximately three months after publication at BNL. There will be a charge for each copy which is undetermined at this time. Requests should be sent to:

National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161 U.S.A.

MONDAY, OCTOBER 5

10:00 a.m.-10:00 p.m.

REGISTRATION - Berkner Hall

ALL PROGRAM SESSIONS AT BERKNER HALL

TUESDAY, OCTOBER 6

8:45 a.m. OPENING SESSION

Chairman: G-Z Zhou

Welcome	N.P. Samios,
Opening Remarks	Y. Yamaguchi
Keynote	V.F. Weisskopf

10:00 Coffee Break

10:20 Updates of Ongoing Major Accelerator
Construction Projects

BEPC	S-X Fang	15 min
HERA	F.J. Willeke	15 min
LEP	C. Wyss	15 min
SLC	R.D. Ruth	15 min
TEVATRON	H. Edwards	15 min
TRISTAN	S. Ozaki	20 min
UNK	N.E. Tyurin	20 min

12:30 p.m. Lunch

2:00 PHYSICS AS A FUNCTION OF ENERGY
AND LUMINOSITY
Chairman: J. Tiomno

THEORY

New Physics in High Energy e ⁺ e ⁻ and Hadron-Hadron Collisions	J.R. Ellis	40 min
Post-Fermi Scale Physics and Future Accelerators	S.S. Gershtein	40 min

3:20 Coffee Break

3:40 EXPERIMENTS

Experimental Problems at Multi-TeV Hadron Colliders and TeV e-e Linear Colliders	D. Froidevaux	40 min
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Detector Strategies and Questions for High Luminosities and Energies	R.F. Schwitters	40 min
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6:00 RECEPTION/BUFFET DINNER -
Brookhaven Center (Hosted by BNL)

8:30 LECTURE

John M. Rowell
Bell Communications Research, Inc.
"The Science and Applications of
High Temperature Superconductors"

WEDNESDAY, OCTOBER 7

- 9:00 a.m. FUTURE FACILITIES
Chairman: N.E. Tyurin
- | | | |
|-----|-----------|--------|
| SSC | M. Tigner | 30 min |
|-----|-----------|--------|
- PROJECTS UNDER DESIGN
- | | | |
|-----|------------|--------|
| LHC | G. Brianti | 30 min |
|-----|------------|--------|
- 10:10 Coffee Break and Photograph
- 10:45 Linear Colliders
- | | | |
|-------|--------------|--------|
| CERN | W. Schnell | 15 min |
| JAPAN | T. Nishikawa | 15 min |
| USA | R.D. Ruth | 15 min |
| USSR | V.E. Balakin | 15 min |
- 12:00 Lunch
- 2:00 p.m. PANEL DISCUSSION:
FUTURE COOPERATION IN
ACCELERATOR CONSTRUCTION (I)
Chairman: W.K.H. Panofsky
- | | |
|---------------|--------|
| S-X Fang | 15 min |
| L.M. Lederman | 15 min |
| J.H. Mulvey | 15 min |
| T. Nishikawa | 15 min |
| (B. Richter) | 15 min |
| H.F. Schopper | 15 min |
| V. Soergel | 15 min |
| M. Tigner | 15 min |
| N.E. Tyurin | 15 min |
- 8:30 CONCERT - The Composers String Quartet
Berkner Hall
- | | |
|------------------|---------------------------------------|
| L. van Beethoven | Quartet Op. 18 #3 |
| L. van Beethoven | Quartet Op. 130
(with Grosse Fuge) |

THURSDAY, OCTOBER 8

- 9:00 a.m. SURVEY OF THE WORK
OF THE ICFA PANELS
Chairman: V. Soergel
- Superconducting Magnets
and Cryogenics
- | | |
|------------|--------|
| G. Brianti | 30 min |
|------------|--------|
- Beam Dynamics
- | | |
|---------------|--------|
| N.S. Dikansky | 30 min |
|---------------|--------|
- 10:10 Coffee Break
- 10:40 Future Instrumentation,
Innovation and Development
- | | |
|---------------|--------|
| T.J.C. Ekelof | 30 min |
|---------------|--------|
- New Accelerator Schemes
- | | |
|--------------|--------|
| A.M. Sessler | 30 min |
|--------------|--------|
- 12:00 Lunch

- 2:00 p.m. PANEL DISCUSSION:
FUTURE COOPERATION IN
ACCELERATOR CONSTRUCTION (II)
Chairman: W.K.H. Panofsky

S-X Fang
L.M. Lederman
J.H. Mulvey
T. Nishikawa
B. Richter
H.F. Schopper
V. Soergel
M. Tigner
N.E. Tyurin

BANQUET - Berkner Hall (Hosted by BNL)

6:30 p.m. Cocktails

7:15 p.m. Dinner

FRIDAY, OCTOBER 9

- 9:00 a.m. PANEL DISCUSSION:
FUTURE COOPERATION IN
ACCELERATOR AND DETECTOR R&D
WORK AND THE ROLE OF THE
ICFA PANELS

Chairman: U. Amaldi

G. Brianti
N.S. Dikansky
T.J.C. Ekelof
H. Hirabayashi
E. Keil
R. Leiste
R.B. Palmer
A.M. Sessler

12:00 Lunch

1:45 p.m. CLOSED ICFA MEETING

1:45 TOUR OF BNL SUPERCONDUCTING
MAGNET FACTORY (2 hours)

SATURDAY, OCTOBER 10

- 9:00 a.m. CLOSING SESSION
Chairman: I.M. Mannelli

Summary	J. Sacton
Recommendations	Y. Yamaguchi
Closing Remarks	N.P. Samios
Acknowledgements	I.M. Mannelli

Economic Summit Workshop Report