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U.S. Department
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**Office of
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U.S. DEPARTMENT OF ENERGY

A U.S. Department of Energy laboratory
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Accelerator Institute Update

Rod Gerig

AAI

August 1, 2007

Upcoming Accelerator Events

- **USPAS 2008 Winter School**

- **University of California, Santa Cruz January 14-25, 2008**

- **USPAS 2009 Summer School**

- **University of Maryland, June 16-27, 2008**

**USPAS sponsored by
University of California at Santa Cruz
and held in Santa Rosa, California
January 14-25, 2008
(Applications accepted in the fall)**

Two-week courses: January 14-25, 2008

(each of the following full courses earns four UCSC quarter units)

**Fundamentals of Charged Particle Optics in High Energy Accelerators
(undergraduate credit), Michael Syphers, Fermilab**

Accelerator Physics, Vladimir Litvinenko, Brookhaven National Lab

**Microwave Measurement and Beam Instrumentation Laboratory, Derun Li,
Lawrence Berkeley National Laboratory, Robert Rimmer, Jefferson Lab and
John Staples (ret.)**

**Synchrotron Radiation and Free Electron Lasers, Kwang-Je Kim and Yin-e
Sun, Argonne National Lab and Zhirong Huang, SLAC**

USPAS sponsored by University of California at Santa Cruz and held in Santa Rosa, California January 14-25, 2008

One-week courses: (each one-week half course earns 2 UCSC quarter units)

One Week 1/2 courses: January 14-18, 2008	One Week 1/2 courses: January 21-25, 2008
Recirculated and Energy Recovered Linear Accelerators , Geoff Krafft and Ivan Bazarov, Jefferson Lab	Magnetic Systems: Insertion Device Design Ross Schlueter and Soren Prestemon, Lawrence Berkeley National Lab
Fundamentals of Storage Ring Design Yannis Papaphilippou, CERN	Response Matrix Analysis: Applications to Accelerator Orbit Control, Optics Diagnostics and Correction Andrei Terebilo, SLAC
High Brightness Electron Injectors for Light Sources David Dowell and John Schmerge, SLAC and Steven Lidia, Lawrence Berkeley National Lab	Accelerator-Based Sources of Coherent Terahertz Radiation John Byrd and Fernando Sannibale, Lawrence Berkeley National Lab
Beam Diagnostics Using Synchrotron Radiation: Theory and Practice Jeff Corbett and Alan Fisher, SLAC	Fundamentals of Timing and Synchronization with Applications to Accelerators Russell Wilcox, Lawrence Berkeley National Lab and John Fox, SLAC/Stanford

Accelerator Institute Technical Notes and Publications

- The Accelerator Institute is beginning two series of notes / publications.
- Publication series (**ANL-AAI-PUB-YYYY-NNN**)
 - The PUB series are for papers of qualities appropriate for publication in referred journals. Although most of these papers will be printed in journals, the PUB will be useful in advertising our research to outside community.
- Technical Notes (**ANL-AAI-TN-YYYY-NNN**)
 - The TN series are technical notes for recording useful experimental procedures, data, or theoretical ideas, etc. Although not as polished as the PUB papers, the notes should be reasonably self-contained for reading by colleagues. The TN notes will be useful for later referencing and also for incorporating into a full report at a later date.
- Please contact Anita for assignment of number (2-5305, alamillo@aps.anl.gov)

LDRD Update

- Accelerator Initiative has become a part of the
 “Large-scale Science User Facility Development Initiative”
 - Twenty seven proposals submitted under the Accelerator R&D key element, presently being reviewed by the accelerator panel

A Strategy to Attract and Educate Accelerator Physicists and Engineers

Focus is on involving area universities (UofC, IIT, NIU, UIC, UIUC, NW), but is not limited to these

The goal of today's meeting is to

- Involve the institute membership in this strategic planning
- Learn from what is working
- Identify people who are willing to assist
- Understand most strategic areas to direct resources
- Determine next steps

A Strategy to Attract and Educate Accelerator Physicists and Engineers

1. Develop accelerator technology as a strategic component within the universities
2. Develop contact(s) within university departments at the faculty level
3. Provide and advertise convenient entry points at the laboratories
4. Create laboratory opportunities designed to initiate an interest
5. Educate graduate students

Related and supporting issues:

- Funding
- Diversity

A Strategy to Attract and Educate Accelerator Physicists and Engineers

1. Develop accelerator technology as a strategic component within the universities
 - Potential Lab Action:
 - Contact Department Chairs
 - Work with university provosts, VPs for R&D, Department Heads., to get this backing
 - Establish a list of area university strengths, interests and contacts for laboratory reference

A Strategy to Attract and Educate Accelerator Physicists and Engineers

2. Develop contact(s) within university departments at the faculty level
 - Many options: joint appointments; course “buy out”, collegial relationships; involve university based facility users

A Strategy to Attract and Educate Accelerator Physicists and Engineers

3. **Provide and advertise convenient entry points at the laboratories -**
this is the basic outreach activity performed by the laboratory.
- Lab staff available to give talks at universities (grad, undergrad)
 - Laboratory create, advertise (and fund) programs that get students interested in accelerators
 - Perhaps the area where Fermilab and Argonne collaboration will be most effective

Laboratory Action -

- Advertise
- Use of Web sites (presently being done)
- Provide funding for USPAS
- Develop speakers list
- Develop Programs

A Strategy to Attract and Educate Accelerator Physicists and Engineers

4. Develop short term opportunities

- Internships
- Staff to work with short term

Laboratory Action:

- Develop, maintain and distribute list of short term projects and opportunities

A Strategy to Attract and Educate Accelerator Physicists and Engineers

5. Educate Students

- Thesis topics
- On-site thesis advisors

Laboratory Action:

- Develop, maintain and distribute list of thesis topics

A Strategy to Attract and Educate Accelerator Physicists and Engineers

The goal of today's meeting is to

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 - Learn from what is working
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- We also will need to address technician needs