

# ANL Theory Institute on Production of Bright Electron Beams

September 22-26, 2003

## PROGRAM STRUCTURE

The program each day for Monday through Thursday is structured as follows:

- 9:00 - 10:30      General sessions with two to three talks each 30 minutes including discussion  
*(Please note: Monday's program will begin at 8:50 a.m.)*
- 10:30 - 11:00    Coffee break
- 11:00 - 12:30    Topical sessions (start at 10:00 a.m. if general session has two talks)
- 12:30 - 1:30     Lunch – The following space has been reserved at the Argonne Cafeteria, Bldg. 213, for those who would like to eat there: Monday, Tuesday, Thursday: Dining Room A; Wednesday: reserved area in main dining room.
- 1:30 - 5:00      Topical sessions continue in the afternoon with a 30-minute break around 3:00. Each topical session starts with a few talks relevant for the topics of the session. The talks may be interspersed frequently with discussions from participants. The topical session chairs will moderate their sessions and prepare a 30-minute oral summary to be presented on Friday.

Friday's program will begin at 9:00 with summaries by the topical session chairs. The chairs are asked to submit a succinct written summary of their session (in Word, PowerPoint, or pdf format) to [cee@aps.anl.gov](mailto:cee@aps.anl.gov) no later than October 10, 2003. The Institute will end by noon on Friday.

## PROGRAM

### Monday – Argonne Guest House, Conference Room A

- 8:20 Coffee and pastries
- 8:50 Greetings H. Grunder
- 9:00 **General Session G1** — Chair, P. O’Shea
- Introductory remarks K.-J. Kim
  - Review of experiments on bright e-beam production P. Piot
  - Summary of the Berlin WS J. Lewellen
- 10:30 Coffee break
- 11:00 **Topical Session A: Emission Processes** — Chair, K. Jensen
- Survey of the emission process K. Jensen
  - Virtual cathode effects P. O’Shea
  - Measurement of thermal emittance W. Graves
  - Discussion
- 12:30 Lunch
- 1:30 *Topical Session A continues*
- 3:00 Coffee break
- 3:30 *Topical Session A continues*
- 6:00 Pizza and Beer reception at K.-J. Kim’s home

### Tuesday – Building 401, Conference Room A5000

- 8:30 Coffee and pastries
- 9:00 **General Session G2** — Chair, J. Galayda
- FEL scaling and super-bright electron beams M. Zolotorev
  - What I learned from 15 years of rf gun operation at BNL X. Wang
  - Compact wakefield measurement facility J. Power
- 10:30 Coffee break
- 11:00 **Topical Session B: Beam Manipulation** — Chair, G. Stupakov
- Conditioned beams: principles and consequences A. Sessler
  - Effects due to strong focusing lattice S. Reiche
  - Limitations of a strong conditioner G. Stupakov
- 12:30 Lunch
- 1:30 *Topical Session B continues*
- Design of a beam conditioner A. Wolski
  - Two Laser-Plasma Methods for Conditioning Beams A. Sessler
  - Further remarks K.-J. Kim
  - Discussion
- 3:00 Coffee break
- 3:30 *Topical Session B continues*

## Wednesday – Building 401, Conference Room A5000

- 8:30 Coffee and pastries
- 9:00 **General Session G3** — Chair, W. Gai  
LCLS project J. Galayda  
APS injector test stand J. Lewellen
- 10:00 **Topical Session C: RF Photocathode Beam Dynamics** — Chair, K. Flöttmann  
Emittance Compensation Overview B. Carlsten
- 10:30 Coffee break
- 11:00 *Topical Session C continues*  
Beam dynamics in rf photocathode gun M. Ferrario  
Microbunching W. Graves  
Virtual cathode and longitudinal phase space D. Dowell
- 12:30 Lunch
- 1:30 *Topical Session C continues*  
Longitudinal instabilities space charge in photoinjector C. Limborg  
beamlines  
Discussion
- 3:00 Coffee break
- 3:30 *Topical Session C continues*
- 6:30 No-host dinner at the Greek Islands Restaurant, Lombard

## Thursday – Building 401, Conference Room A5000

- 8:30 Coffee and pastries
- 9:00 **General Session G4** — Chair, X. Wang  
LEUTL-ALFF project S. Milton  
Photoinjector guns at AWA M. Conde
- 10:00 **Topical Session D: R&D Planning** — Chair, A. Sessler  
Discussion of DOE 20-year road map J. Corlett
- 10:30 Coffee break
- 11:00 *Topical Session D continues*  
LCLS gun development D. Dowell  
Gun development at Advanced Energy Systems H. Bluem  
Discussion
- 12:30 Lunch
- 1:30 *Topical Session D continues*
- 3:00 Coffee break
- 3:30 *Topical Session D continues*

## Friday – Building 401, Conference Room A5000

8:30 Coffee and pastries

9:00 Summary session — Chair, K.-J. Kim

Emissions Processes

Beam Manipulation

RF Photocathode Beam Dynamics

K. Jensen

G. Stupakov

K. Flöttmann

10:30 Coffee break

11:00 *Summary session continues*

R&D Planning

Closing remarks

A. Sessler

K.-J. Kim

12:00 Meeting adjourns