ATF’s 12th year!

- The ATF is a proposal-driven, advisory committee reviewed USER’S FACILITY for long-term R&D in Accelerator and Beam Physics.
- The ATF features high-brightness e beams synchronized to high-power lasers.
- The ATF serves the whole community: National Labs, universities, industry and international collaborations.
- ATF contributes to Education in Beam Physics.
- In-house R&D on photoinjectors, laser, diagnostics, computer control and more.
- Support from DOE, (HEP and BES), BNL Directorate and our users.

ATF: A RESOURCE FOR ACCELERATOR SCIENCE
The ATF User’s Meeting and Program Advisory Committee Meeting

- In this meeting the ATF users and potential users come to hear about the progress in the facility, its experiments and present new proposals.
- The ATF Program Advisory Committee (APAC) is selected by R. Palmer, reviews proposals and advises R. Palmer on the program.
- APAC Chair is Professor C. Joshi. Previous chairs:
  - Professor Robert Siemann, Stanford Linear Accelerator Center
  - Dr. Andrew Sessler, Lawrence Berkeley National Laboratory
  - Professor Maury Tigner, Cornell University
ATF Program Advisory Committee

- Professor C. Joshi, Chair, UC at Los Angeles
- Professor S. Chattopadhyay, TJNAF
- [Professor R. Gluckstern, University of Maryland]
- Dr. M. Harrison, Brookhaven National Laboratory
- Dr. S. Milton, Argonne National Laboratory
- Professor P. O'Shea, University of Maryland
- Professor R. Ruth, Stanford Linear Accelerator Center
- Professor T. Smith, Stanford University
What is new at the ATF:

- The ATF moved to the Physics Department.
- ATF Users now served by the RHIC-AGS Users’ Center.
- Vitaly Yakimenko was assigned as Deputy ATF Director.
- Karl Kusche was appointed as the ATF’s ESH&Q officer.
- New faces at the ATF: Kelly Bergesen (software and graphics), Todd Corwin (Mechanical and electrical systems), Don Davis (laser and mechanical systems), Igor Pavlishin (laser physics) Takahiro Watanabe (accelerator physics).
- The facility performance continues to increase.
Making a better facility:

- Continuous improvement of brightness, stability, experimental chambers, diagnostics, control systems and much more: Hear the next presentation by Vitaly Yakimenko.
- Higher power lasers, new channeling capabilities, better uniformity, stability… Hear presentation by Igor Pogorelsky and Marcus Babzien.
- Improved communications with users: Long-range schedule, web information, e-mail newsletter, training...
ATF Statistics

Run time: ~ 1000 hour / year
Graduated students: 19
Current number of experiments: 14
Staff members: 11, 1 visitor
Phys Rev X: ~ 3 / year since 1995
Getting spectacular results…

- High-Gain Harmonic Generation FEL, Visible SASE FEL, photoinjectors…
- and since last meeting:
  - Measurement of focusing as function of phase in plasma wake-field
  - Mono-energetic laser acceleration
  - CO2 laser channeling in plasma
Brookhaven National Laboratory

Brookhaven Science Associates

BNL LAD for HE-NP
T. Kirk

Physics Department
S. Aronson, Chair
M. Zarcone, ES&H Coord.

ATF
Director, I. Ben-Zvi
Deputy, V. Yakimenko
ESH&Q, K. Kusche
Secretary K. Tuohy

Software and control
R. Malone, K. Bergesen

CO₂ laser and laser accelerators
I. Pogorelsky, I. Pavlishin

Nd:YAG laser, optics, diagnostics
M. Babzien

Accelerator and diagnostics
(V. Yakimenko), T. Watanabe

Technical Support
M. Woodle, engineering
A. Rodrigues, electric
D. Davis, optic / mechanic
D. Corwin, mechanic / electric
The agenda for this meeting: The ATF

Thursday
9:50 - 10:20 ATF Operations, Performance and Upgrades, V. Yakimenko, ATF
10:20 - 10:50 * Coffee Break *
10:50 - 11:20 The ATF Lasers, I. Pogorelsky, ATF

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3:00 - 3:15 Development of diagnostic systems for ATF operation/experiments, Takahiro Watanabe, BNL

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Friday (the whole morning) –
visit the ATF and its experiments
The agenda for this meeting: Reports from User Experiments

11:20 - 11:35 Plasma Experiments, Vitaly Yakimenko, ATF
11:50 - 12:05 Compton Scattering of Picosecond Electron and CO2 Beams, Tetsurou Kumita, Tokyo Metropolitan Univ.
12:05 - 1:15 LUNCH BREAK
The agenda for this meeting: Reports from User Experiments (continued)

1:15 Photocathode R&D and superconducting photoinjector, Andrew Burril, BNL
1:30 Dielectric Wake Field experiments, Sergey Shchelkunov, Columbia University.
1:45 Ultrafast Detection of Relativistic Charged Particles by Optical Techniques, Thomas Tsang, BNL
2:00 LACARA experiment, Jay Hirshfield, Yale and Omega-P.
2:15 Electron Beam Pulse Compression Based Physics, James Rosenzweig, UCLA
2:30 VISA Experiment, James Rosenzweig, UCLA
2:45 Optical Diffraction-Transition Radiation Interferometry Diagnostics, Ralph Fiorito, Univ. of Maryland
The agenda for this meeting:
New User Proposals

3:15 - 3:30 * Coffee Break *

3:30 - 4:00 “A Bunch-Length Diagnostic Using Wake Field Radiation”, T. C. Marshall, Columbia University

4:15 - 4:45 “Laser Wakefield Acceleration Driven by a CO2 Laser (STELLA-LW)” Wayne Kimura, STI Optronics

5:00 - 5:30 “Multi-bunch Plasma Wakefield Acceleration at ATF”
T. Katsouleas, University of Southern California,

5:45 - 6:15 “A Proposal to Study the Feasibility of a Novel Vacuum Laser Acceleration Experiment at the BNL – ATF”,
David Cline, UCLA

7:00 DINNER - Berkner Hall,
courtesy of Brookhaven Science Associates
The agenda for this meeting:
New User Proposals (continued)

Friday, January 9th
8:00 – Continental Breakfast, Physics Lounge, Courtesy of Brookhaven Science Associates

8:30 - 9:00 “Applications of coherent surface phonon polaritons in thin SiC films to sub-wavelength lithography and compact particle accelerators.” Gennady Shvets, IIT

9:15 - 9:45 "Non-invasive temporal bunch profile measurement" by the Smith-Purcell interaction. J.H. Brownell, Dartmouth College, and H. Kirk, Brookhaven National Lab
Thank you all for coming to this meeting. I hope you will enjoy the program.

For your information:

The 11th Advanced Accelerator Concepts Workshop 2004

Stony Brook, NY June 20-26

Organized by Stony Brook University and the Brookhaven National Laboratory Accelerator Test Facility