

Operational and User Statistics

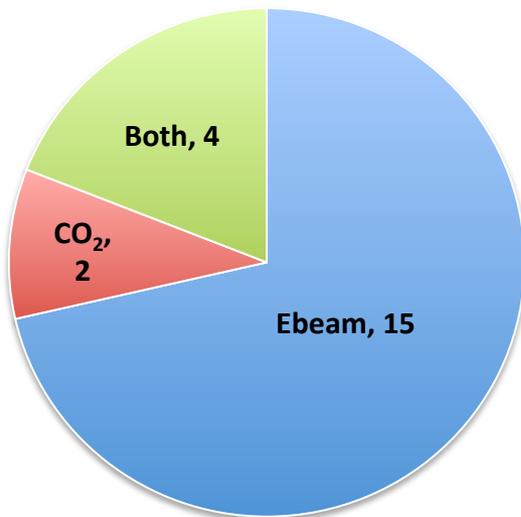
Christina Swinson

Outline

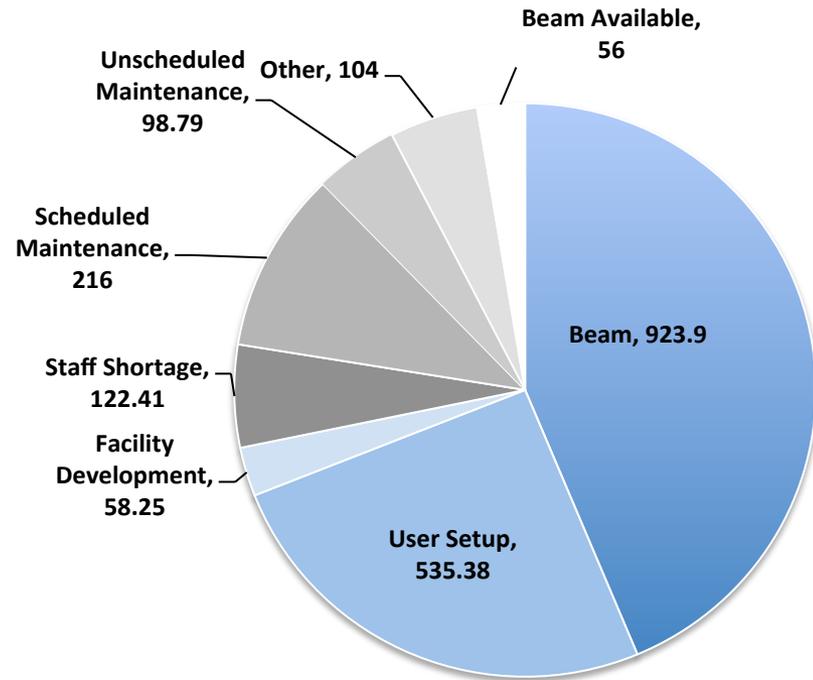
- Experiment Program & Operations
- User demographics
- Performance metrics
 - Publications etc.
- New Procedures
 - Proposal Submission
 - User Census
 - Beam Scheduling
- Communications
 - Website
 - Newsletter
 - @ATFatBNL

Experimental Program & Operations

Active Experiments: 21*



Experiment Type



Electron Beam (distribution of activities)

Total: 2064 h⁺

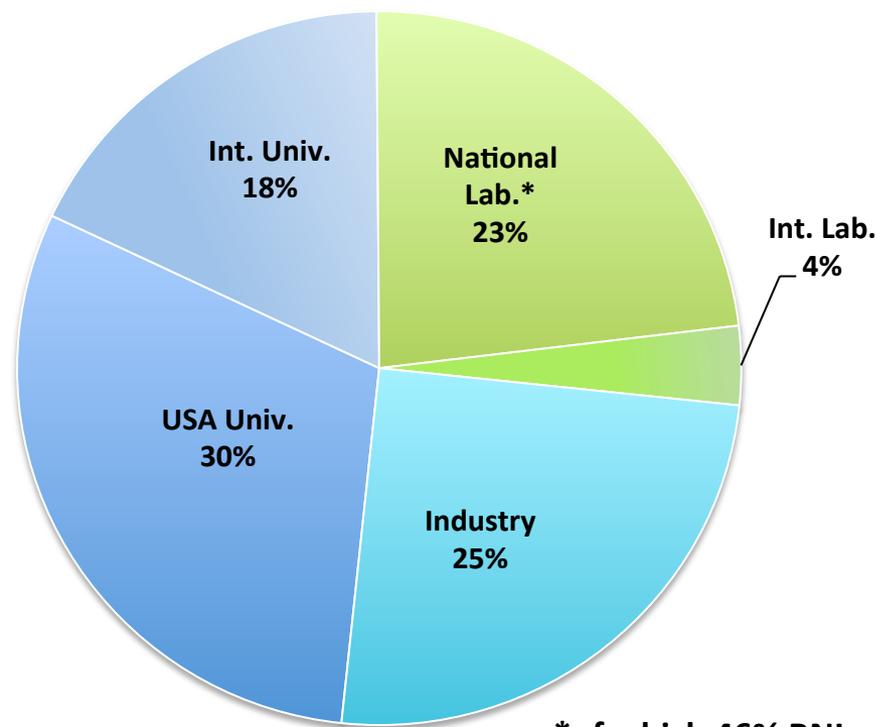
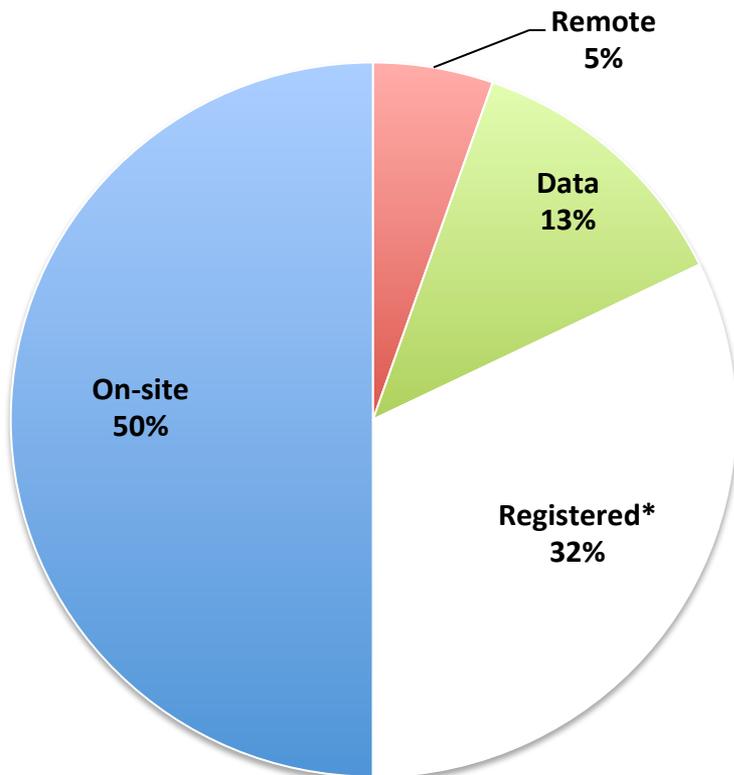
of which 1515 made available for experimenters

⁺scheduled working hours

* Including feasibility studies; some may be declared completed at this user meeting

FY14 Users (by type and sector)

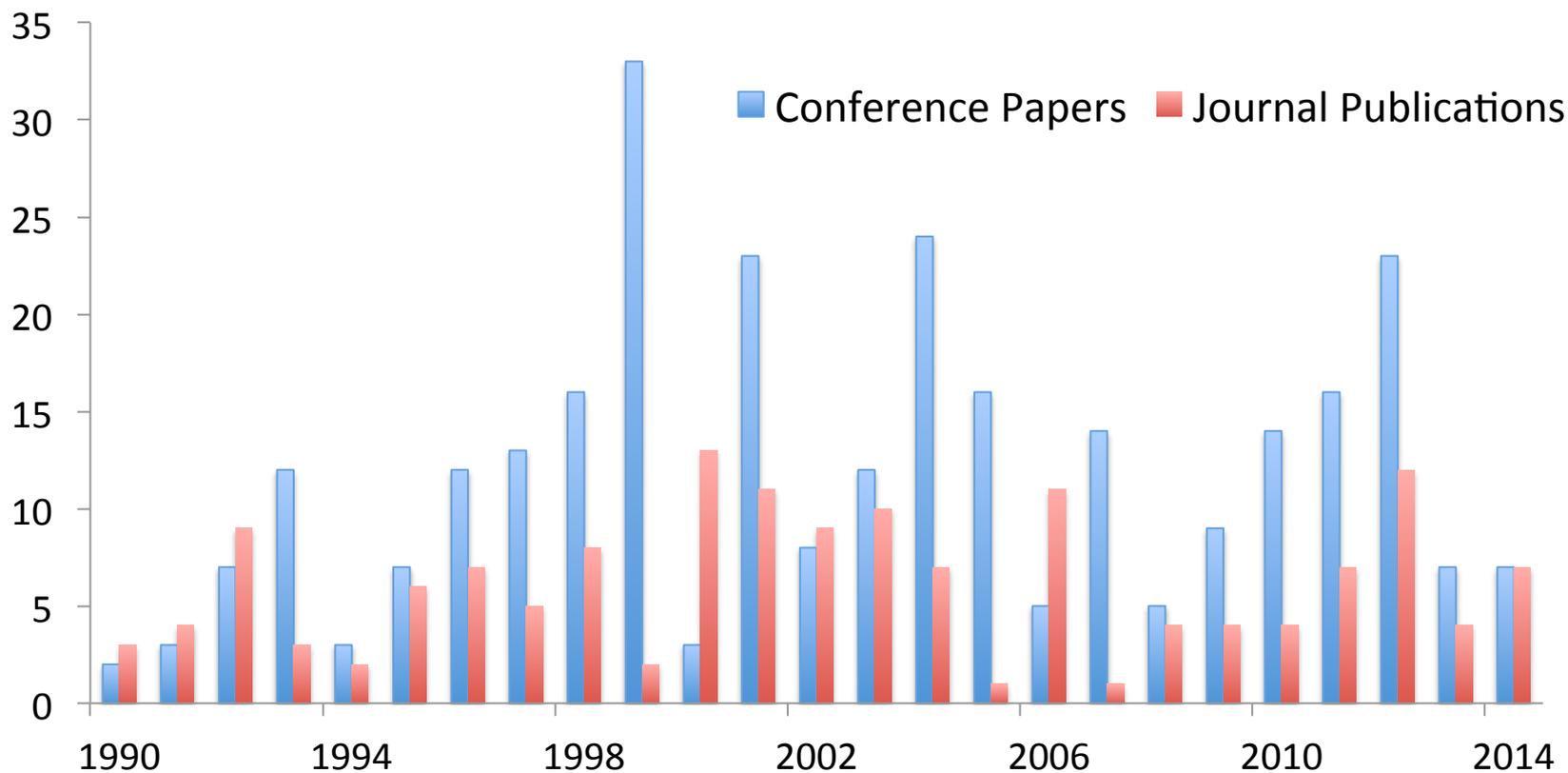
Total users: 56



*badged users who are collaborators in active experiments but who were not on-site in FY14

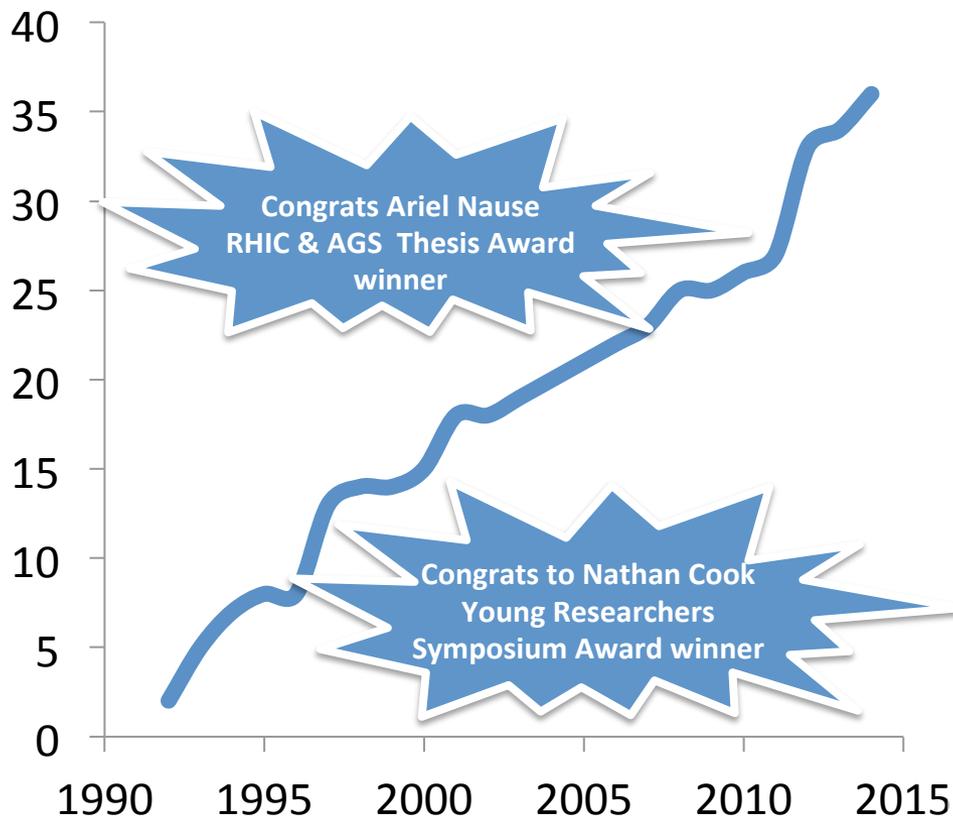
*of which 46% BNL users

Publications by Calendar Year



Educational Contributions

Graduating Students (Cumulative)



- This excellent record will improved with increased capacity from ATF upgrade.
- Collider-Accelerator department gives the ATF a closer relationship with Stony Brook University and the Center for Accelerator Science and Education (CASE).
- CASE hands-on accelerator class to be taught at ATF.
- 2-day course in development for Stony Brook women in science undergraduates.
- The ATF continues its long history of hosting summer students.

New Procedures

New procedures are being introduced to ensure that, as the ATF grows, users will continue to get the most out of our facilities. These new procedures will:

- Facilitate the extra DOE reporting that comes with the Accelerator Stewardship program.
- Give feedback to the ATF director and program advisory committee about the needs of the user community.
- Streamline proposal submissions and beam scheduling.
- Allow more efficient use of ATF staff resources.

New Procedures Contd.

Many of you have dealt with our new user census, proposal submission and shift request forms. These were an initial effort to formalize ATF user operations.

Coming up next:

- Centralized online submission for all user related forms.
- Introduction of a short end-of-run report.

Aim to have a fully automated online proposal submission system by 18th ATF user meeting

Communications

Website

- Re-developed for ease of navigation.
- Provides valuable user information, including beam schedule, safety and experiment procedures.



A user facility for the advancement of laser and accelerator physics

The Accelerator Test Facility provides experimenters with the equipment necessary for the advancement of accelerator technologies, with a view to develop smaller machines and more cost-effective methods of particle acceleration.

[> Contact Us](#)

Also:

- Join our twitter feed by following [@ATFatBNL](#).
- Read our recently published newsletter, available on the website.

Electron/Laser Facility

The ATF provides a very high brightness electron beam to four beam lines, synchronized with high-power lasers. The electrons are produced by a photoinjector, whose photocathode is illuminated by a frequency quadrupled solid-state laser. Two S-band linear accelerator sections accelerate the electrons. The beam can be manipulated in the transport line to deliver it to one of several targets in the experimental hall. There are more than 40 quadrupoles along four transport lines to tailor the beam to particular experiments. More than 50 high-resolution profile monitors measure the beam's particle distribution.

CO₂ Laser

ATF's carbon dioxide laser is the only tera-watt

Experimental Work

Plasma Wakefield Acceleration is a method for accelerating particle beams over much shorter distances than traditional accelerators. An electron bunch travelling through a plasma creates wakefields through which subsequent electron bunches may be accelerated at a high gradient. This technique produces more compact, more energy-efficient high-energy particle beams.

Medical Imaging. Interaction of the ATF electron beam with the CO₂ laser is a viable source of fast x-rays with wavelengths on the scale of pico- or femtoseconds. These x-rays have uses in ultrafast imaging, positron production, and many other applications.

Ion Generation. MeV proton beams generated by

[ATF Newsletter \(PDF\), Fall 2013](#)

ATF Experiments

[Active](#) | [Completed / Terminated](#)

Updates from ATF Follow ATF

- ATF** @ATFatBNL 25 Sep
Newsletter sneak peek: Experimental demonstration of a tunable de-chirper. Expand
- ATF** @ATFatBNL 24 Sep

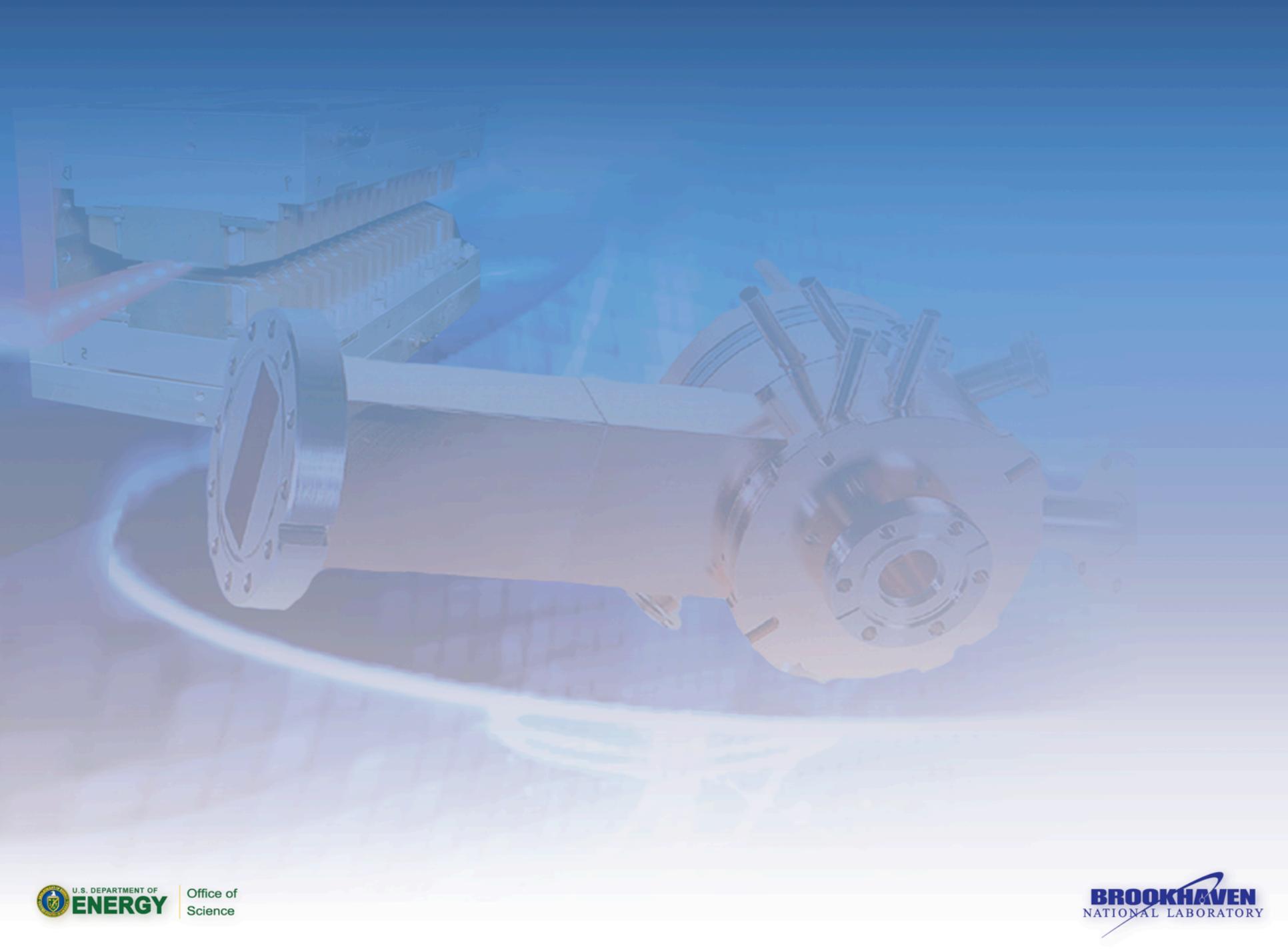
New Reporting Practices

The ATF will begin new reporting practices in FY15. As an accelerator stewardship and user facility, the ATF will provide quarterly operations statistics and annual user and experiment statistics. For example:

- Operations
 - Beam time
 - User setup time
 - Maintenance time ...
- User stats
 - Count
 - Type (On-site, remote, data)
 - Demographics ...
- Performance metrics
 - Publications
 - Citations
 - Graduations
 - Patents
- Experiment stats
 - Funding sources
 - Experimental requirements
 - Impact on HEP mission...

Summary

- This year operations saw ebeam availability of 1515 hours and 924 used. Of the 591 not used 91% was allocated to user setup time.
- The ATF remains committed to education and serves educational programs for both undergraduate and graduate students through Stony Brook University and BNL summer programs.
- New formalism comes out of new reporting requirements and out of a need to streamline user management at the larger facility, ATFII.
- When fully tested and implemented, new user procedures will serve to relieve paperwork burden for users and ATF personnel.
- Check out our website www.bnl.gov/atf
- Follow us [@ATFatBNL](https://twitter.com/ATFatBNL)



How to become an ATF User

Apply for Access

advancement of laser and accelerator physics

The Accelerator Test Facility provides experimenters with the equipment necessary for the advancement of accelerator technologies, with a view to develop smaller machines and more cost-effective methods of particle acceleration.

[Contact Us](#)

Proposal Request Sheet

PRINCIPAL INVESTIGATOR

Last Name: _____ First Name: _____
 Institution: _____ Street Address: _____
 City: _____ State: _____ Zip: _____
 Phone: _____ E-mail Address: _____

SECONDARY INVESTIGATOR(S)

Last Name: _____ First Name: _____ E-mail Address: _____
 Institution: _____ Street Address: _____
 City: _____ State: _____ Zip: _____
 Phone: _____ E-mail Address: _____

EMPLOYMENT DETAILS

Title: _____
 Academic Non-Academic Retiree Working Student
 Employer: _____

SPECIAL REQUIREMENTS

Special Requirements: _____
 Study and/or other: _____

Please attach a detailed scientific outline (including references) and email to: atf@bnl.gov
 For more information please contact Barbara Tynell: barb@bnl.gov

Program
Advisory
Committee
(users meeting)

Electron/Laser Facility

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Experimental Work

Plasma Wakefield Acceleration is a method for accelerating particle beams over much shorter distances than traditional accelerators. An electron bunch travelling through a plasma

[ATF Newsletter \(PDF\), Fall 2013](#)

[ATF Experiments](#)

Experiment
Approved

Users' Place

necessary for the advancement of accelerator technologies, with a view to develop smaller machines and more cost-effective methods of particle acceleration.

[Contact Us](#)

Electron/Laser Facility

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Experimental Work

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[ATF Newsletter \(PDF\), Fall 2013](#)

[ATF Experiments](#)

- Apply for site access
- Submit ES&H paperwork
- Coordinate experiment installation

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Sunday						
October			NA-PAC'13			5
6			AE50 - PWFA in QNR, BL2			12
13			AE50 - PWFA in QNR, BL2			19
20			Interlock Recertification			26
November			AE52 - DWFA (Euclid), BL2			2
3			AE52 - DWFA (Euclid), BL2			9
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

Arrive
at ATF

Training

Experiment (with full support from accelerator, laser & plasma physicists; mechanical, electrical and vacuum technicians; instrumentation and controls specialists)

Present results
at user meeting