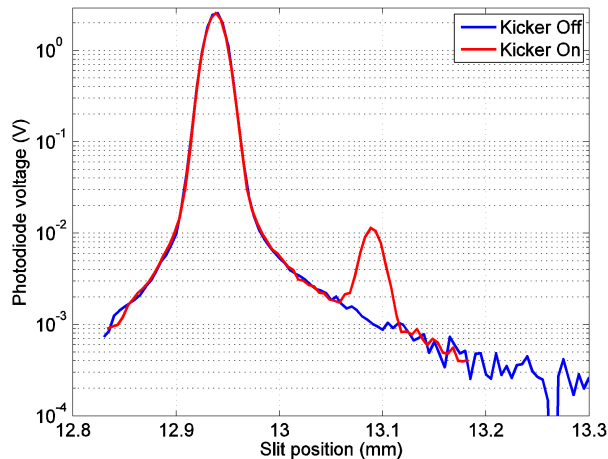


## Pseudo-Single-Bunch with Adjustable Frequency



Facilities such as the Advanced Light Source (ALS) are usually limited to serving either their high-brightness/high flux users or their timing experiment users. High brightness experiments require filling most of the rf buckets with electrons, thus maximizing the total number of electrons in the ring. In such a multibunch filling pattern, the bunch spacing is typically only a few nanoseconds between electron bunches and therefore x-ray pulses. On the other hand, timing experiments require longer times between x-ray pulses. Presently high speed, high power choppers are used to temporally isolate light from single bunches. However, such choppers are complicated and expensive.

At the ALS, we have been exploring a new mode that we call “pseudo-single-bunch” (PSB) operation, the goals of which are to allow multibunch and timing experiments to run simultaneously. The idea behind PSB operation is to use a high-repetition (MHz)-rate, short-pulse (< 100 ns) kicker to vertically displace a single “camshaft” bunch relative to the other bunches. Experiments that require light emitted only from a single bunch can block the light emitted from the other bunches using a collimator. This is illustrated in the graphic. The PSB timing could be at the orbital period (~1 $\mu$ s) or longer, depending upon how frequently the bunch is displaced.

At the ALS, PSB operation has been demonstrated in various operation forms, allowing considerable flexibility. It allows the use of non-gated detectors, greatly increasing the variety and quality of experiments that can be done. A video explaining the technique in detail can be found at [http://als.lbl.gov/als\\_physics/csun/ALS\\_PseudoSingleBunch.mov](http://als.lbl.gov/als_physics/csun/ALS_PseudoSingleBunch.mov)

## Do You Know That the Lab Offers Dependent Back-Up Care?

More than two years ago the Lab contracted with Bright Horizons, to offer dependent back-up care to employees. Although the program is in its third year it is still not used as often as was expected based on the Lab’s population. Part of the reason might be that a lot of eligible employees are not aware of the program or at least not of the full scope of it. So here is a short summary of what the program offers.

Employees no longer have to miss work when their normal care arrangements are unavailable. Employees have access to a comprehensive national network of childcare centers and in-home providers for child, adult and elder back-up care needs.

The Bright Horizons back-up care can be used for these and other occasions: Unavailability of your regular caregiver; mild illness of a child, adult, or elder; School closures; transition between old/new caregiver arrangements; travel or changes in work location (nursing mothers can take their child with them to an out of town conference and use a daycare center or caregiver at that location); transition following maternity leave. The service can be used up to 15 days per calendar year.

For purposes of this benefit, ‘dependent’ is anyone who depends on the caretaking of the employee. This is most frequently a child, spouse, domestic partner, parent, or other family member, but is not limited to these or any other specific categories. In addition, this benefit can be used by the employee directly. Children are age 0-17 and adults are age 18 and above.

Here is what some Lab employees who have used the program have to say:

Ina Reichel (AFRD): I recently used it for the first time when my son’s school was closed for a day. As he is 11 years old he mostly needs some supervision in order not to watch TV all day and someone to do some activities with him. The nanny that came to our house was great. They had a lot of fun, went to the park for a bit, played lots of board games and she even made him practice his cello. I will definitely use the program again.

Jill Fuss (Life Sciences Division): I’ve been very happy with the Lab’s Back-Up Care program. I’ve mostly used it for days when my daycare is closed but the Lab is open, but I also really appreciate that I

can use it when traveling or on short notice too. The caregivers have been very fun. It's not unusual for them to show up with games and toys to play with the kids. It has saved me many days of work and a lot of stress.

For more information on the program and to register, please go to <http://backupcare.lbl.gov/>

## Get to Know Your Colleague: Hamed Tarawneh

**What's your name? How do you pronounce it (unless it's obvious)? Do you usually go by a nickname or an anglicised version of your name?**

Hamed Tarawneh. Although it is obvious but I noticed most people pronounce it as Amed.

**What is your current position and what are you working on right now?**

Research scientist with the Accelerator Physics group at the Advanced Light Source since August 2012. I work now on design studies for a potential upgrade of a diffraction limited ALS.

**What is your professional background? Where did you work before coming to the Lab?**

Before my current job, I did my PhD in Accelerator Physics at MAX-Lab, Lund University, Sweden and I worked for the SESAME synchrotron project in Jordan for five years before coming to LBNL.

**Where are you from originally? Where did you go to college or university?**

I am from Karak, Jordan and I did my first degree in Electrical Engineering at Mutah University, Jordan.

**What was the most amazing or coolest thing you got to do for work? Or the most amazing place you visited as part of your job?**

Of course it is CERN and having a walk in the "endless" tunnel of the Large Hadron Collider (LHC).

**Do you have children? Pets? Want to tell us about them?**

Two children. 2nd grader son, Ward, very curious, he questions almost everything and is very talkative too. A two-year old daughter, Lillian. She is simply a joy.

**What would you be or do if you weren't in your current line of work? What would your alternate career be?**

I do like teaching very much, so, I guess, it would be a teacher.

**With which scientist (past or present) would you like to discuss their work?**

Stephen Hawking. It would be nice to have the "secret formula" for building a time machine.



## Calendar

December 16th	1:30am-1:30pm	7-211	BLAZES Volunteer Training (registration required)
December 20th	12:00-1:30	71-264	CBP/LOASIS Holiday Potluck

## Link of the Month: [myfamily.lbl.gov](http://myfamily.lbl.gov)

In addition to the dependent back-up care program there might be other family-friendly benefits the Lab offers that you might not know about. The Lab's Women Scientists and Engineer's Council together with the Lab's Diversity & Inclusion Office have put together a website with a lot of information about services and benefits offered by the Lab but also links to external resources. It can be found at <http://myfamily.lbl.gov>

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Thanks to David Robin for the article on the ALS, Hamed Tarawneh for "Get to Know Your Colleague", and Jill Fuss for the testimonial on the back-up care. Thanks to Joe Chew and Sam Vanecek for proofreading.

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Please send suggestions for news items, links or "get to know your colleague" to Ina Reichel ([IReichel@lbl.gov](mailto:IReichel@lbl.gov)).