

FRIDAY FLYER – AUGUST 24, 2012

Something to share—an interesting research project or kudos for a student, teacher or mentor?
Contact Kris Whelan.

CENTER SPOTLIGHT: University of Iowa -<http://highenergy.physics.uiowa.edu/qnet/>

Iowa is just one of many centers that allows teachers and students to test and build components of the "Big Experiments." Contact Yasar Onel for tips on working with QuarkNet participants to meet department goals.

Yasar Onel and his group of high-energy physicists at the University of Iowa work on the CMS forward calorimeter end caps (HF). These components include PMTs that detect particles in high-radiation environments. In one of QuarkNet's original centers, Peter Bruecken went to CERN to work on radiation studies in 1999. Over the years, typical QuarkNet activities include preparing quartz optical fibers, testing PMTs, running tests on quartz specimens before and after exposure to radiation, polishing quartz fibers and plates, setting up labs and computer-controlled experiments as well as writing papers about their experiences and results. The QuarkNet team works in tandem with the undergraduate and graduate students and the professors in the HEP group, assisting in reaching the goals set by the department.

On average, Iowa hosts two or three teachers and four students per summer. Each year Iowa teachers and students take a trip to Fermilab. During alternate years since 2000, Iowa also holds a weeklong teacher workshop. Approximately 20 teachers participate in activities focused on teaching skills and content related to high-energy physics. The teachers also work with the Quarknet cosmic ray detector and other projects. This year, the group is testing a new type of PMT, preparing quartz fibers for radiation tests and running their teacher workshop. They will also receive a "jaw-breaker" collider to take back to their schools. The students assisted in the development and construction of this "make and take" item. The University of Iowa QuarkNet Center puts high school students and teachers in contact with some pretty high-ranking researchers. They find a new appreciation for the level of skills and hard work that is necessary to explore nature. In fact, one of the postdocs is a former QuarkNet summer student, thus providing an example to current students of the possibility of a future in science.

NEWS FROM QUARKNET CENTRAL Mentors, don't forget the upcoming deliverables deadline for an updated teacher contact list, an annual report of activities, attendance sheets, invoices, and, where applicable, student research abstracts. Teachers can help their mentors by ensuring that their contact information is correct and by submitting any receipts for approved reimbursements in a timely fashion. Soon, we will be asking all centers for their projected budget for FY13 as well as any requests for cosmic ray detectors. Begin thinking about what your center would like to accomplish in the new year. Please contact your staff teacher if you have questions.

EVENT OF THE WEEK:

Higgs candidate in ATLAS

<http://www.flickr.com/photos/uslhcf/7851203822/in/photostream>

JUST FOR FUN:

A Capella Science - Rolling in the Higgs <http://www.youtube.com/watch?v=VtltBX111VY>

PHYSICS EXPERIMENT ROUNDUP: [http://www.fnal.gov/pub/today/archive_2012/today12-08-](http://www.fnal.gov/pub/today/archive_2012/today12-08-21.html)

[21.html](http://www.fnal.gov/pub/today/archive_2012/today12-08-21.html) How many of you have toured Fermilab and were amazed at the futuristic Cockcroft-Walton generator? "Fermilab has had many different accelerators in its four-decade history. From the Linac to the Tevatron to the Main Injector, every one of them has been powered by a Cockcroft-Walton generator. That ends [today], when the generators send out their last beam." –

Fermilab *Today*

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