

## Calendar

### Wednesday, August 16

**11:00 a.m.** Fermilab ILC R&D meeting -

Curia II (note location)

Speaker: N. Solyak, Fermilab

Title: ILC Main Linac Design

**2:30 p.m.** Hadron Collider Physics

Summer School Open Lecture -

Auditorium

Speaker: J. Womersley, Rutherford

Appleton Laboratory

Title: Physics Analysis I

**3:30 p.m.** DIRECTOR'S COFFEE

BREAK 2nd Flr X-Over

**4:00 p.m.** Fermilab Colloquium -

Auditorium (note location)

Speaker: T. Tait, Argonne National

Laboratory

Title: High Energy Colliders as Tools to

Understand the Early Universe

### Thursday, August 17

**2:15 p.m.** Hadron Collider Physics

Summer School Open Lecture -

Auditorium

Speaker: M. Strassler, University of

Washington

Title: Beyond the Standard Model - 3

**2:30 p.m.** Theoretical Physics Seminar -

Curia II

Speaker: U. Baur, State University of

New York, Buffalo

Title: Weak Boson Emission in Hadron

Collider Processes

**3:30 p.m.** DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

**3:45 p.m.** Hadron Collider Physics

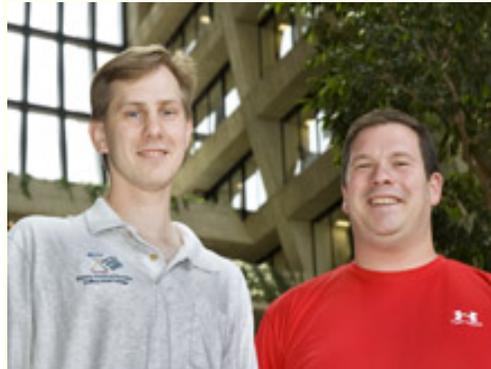
Summer School Open Lecture -

Auditorium

Speaker: D. Green, Fermilab

Title: First Years LHC Experiment

## Fermilab boosts physics education with QuarkNet



Larry Hiller (left) and David McClary are QuarkNet teachers.

When physics teachers David McClary and Larry Hiller first heard about the QuarkNet program through the particle physics group at the University of Buffalo, the teachers thought the program seemed too good to be true. Would QuarkNet simply donate a cosmic-ray detector to their school? "We ultimately found out that we would do research at Fermilab for four weeks and then take a detector home with us," McClary said--an opportunity even better than they had imagined. "The day after we found that out, we were both on board."

This summer, both teachers worked at Fermilab's Silicon Detector facility and helped with the Forward Pixel Detector, a tracking device for the CMS detector at CERN. "We didn't expect to work quite as independently as we did," McClary said. The physics duo also received tours of Fermilab that provided additional information to take back to the classroom. "This has been something beyond anything either of us imagined," McClary said. "It's just been outstanding."

## From the Laboratory Services Section

### Summer students add energy

*This week's column features Kay Van Vreede, head of the Laboratory Services Section.*

Right now one of the topics of conversation in the cafeteria centers on kids returning to college and the start of local schools. That means that our summer students are departing from Fermilab, too.



Kay Van Vreede

This year we hired around 250 summer workers. Arriving and departing...it's all a lot of work for lab services. This year we introduced some new practices that helped streamline the whole process. We made job openings and applications all electronic. Students are on the Internet constantly, so it makes sense to fit the application process to their lifestyle. We also packed all the training into the first day so when our summer employees reported to their jobs, they already, in most cases, had all their required training.

So what are we doing now? Over the next few weeks we will process all of our summer workers back out. But it's worth the work. Every year it's great to see the students - they are enthusiastic, full of new ideas, and ready to learn. I think it gives our lab a new burst of energy. This year's summer workers mowed the fields,

Program - 1

**4:00 p.m.** Accelerator Physics and  
Technology Seminar

Curia II (note location)

Speaker: D. Swenson, Epion Corporation

Title: Improving the Performance of SRF  
Cavities and Other High Voltage  
Electrodes by Treating the Surfaces with  
Gas Cluster Ion Beams (GCIB): Can a  
Perfect Electrode be Manufactured and  
Tested?

[Click here](#) for a full calendar with links  
to additional information.

### Weather



Mostly Sunny **85°/59°**

[Extended Forecast](#)

[Weather at Fermilab](#)

### Current Security Status

[Secou Level 3](#)

### Wilson Hall Cafe

**Wednesday, August 16**

-Vegetable Beef

-Fish & Chips

-Almond Crusted Sole

-Country Fried Steak w/Pepper Gravy

-Beef & Cheddar Panini w/Sauteed

Onions

-Assorted Slice Pizza

-Cavatappi Pasta w/Italian Sausage &  
Tomato Ragù

[Wilson Hall Cafe Menu](#)

### Chez Leon

Returning home, the teachers from North  
Tonawanda High School in New York will  
assemble the cosmic-ray detector. CMS  
physicist Avto Kharchilava, one of  
several particle physics experimenters  
and theorists hired by the University of  
Buffalo to start a new particle physics  
group, will be the local QuarkNet mentor.

When operational, the cosmic-ray  
detector will provide data online so other  
schools can use its data, too. "The  
detector will be linked with other schools  
in Rochester and Syracuse," Hiller said.  
"The fact that so many students will be  
able to play with this thing is really  
exciting for us." Instead of just  
memorizing the names and properties of  
particles, the cosmic ray detector will  
give students a chance to participate in a  
high-energy physics lab experience,  
Hiller said.

More information about QuarkNet, which  
is funded by the National Science  
Foundation and the DOE Office of  
Science, is available [online](#).

--Dave Mosher

### In the News

#### **Time, August 11, 2006: The Unraveling of String Theory**

By now, just about everyone has heard  
of string theory. Even those who don't  
really understand it--which is to say, just  
about everyone--know that it's the hottest  
thing in theoretical physics. Any  
university that doesn't have at least one  
string theorist on the payroll is  
considered a scientific backwater. The  
public, meanwhile, has been regaled for  
years with magazine articles breathlessly  
touting it as "the theory of everything."  
Brian Greene's 1999 book on the topic,

helped with repairs, created websites,  
worked on experiments, tended children,  
learned new teaching techniques,  
debugged computer programs. Maybe  
something they learned this summer will  
spark or fuel the flames of interest in a  
lifelong career. And maybe, in the future,  
some of these young workers will take  
the education and passion they learned  
here at Fermilab and make their own  
impact on science, and on the world.

### Sports today: Frisbee, football, basketball and golf



**Frisbee:** Yesterday's Frisbee game between  
Argonne and Fermilab ended with a 15-13  
victory for Fermilab. "It's the first time Fermi  
has beaten Argonne in a long time," said  
player Ben Berger.



**Football:** Fermilab's Astrophysics group  
played football against the Theory group last  
Thursday. The game ended in a tie. "Get  
ready for the intergalactic softball  
championships," said astrophysicist Rocky  
Kolb.



**Wednesday, August 16****Lunch**

- Chicken Sate' w/Peanut Sauce
- Marinated Oriental Salad
- Coconut Cake

**Thursday, August 17****Dinner**

Closed

[Chez Leon Menu](#)

Call x4598 to make your reservation.

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The Elegant Universe, has sold more than a million copies, and his Nova series of the same name has captivated millions of TV viewers.

But despite its extraordinary popularity among some of the smartest people on the planet, string theory hasn't been embraced by everyone--and now, nearly 30 years after it made its initial splash, some of the doubters are becoming more vocal. Skeptical bloggers have become increasingly critical of the theory, and next month two books will be hitting the shelves to make the point in greater detail. Not Even Wrong, by Columbia University mathematician Peter Woit, and The Trouble with Physics, by Lee Smolin at the Perimeter Institute for Theoretical Physics in Waterloo, Ont., both argue that string theory (or superstring theory, as it is also known) is largely a fad propped up by practitioners who tend to be arrogantly dismissive of anyone who dare suggest that the emperor has no clothes.

There were good reasons for the theory's appeal when it first emerged in the late 1970s and early '80s. At the time, physicists found themselves facing a crisis: the two most important ideas of 20th century physics, relativity and quantum theory, were known to be fundamentally incompatible. Quantum theory describes the universe as intrinsically discontinuous: energy, for example, can come in bits just so small, but no smaller. Relativity treats time and space and gravity as a smooth, unbroken continuum. Each theory has its purposes, and they usually don't overlap. But when dealing with very large masses or time periods that are infinitesimally small, like the core of a black hole or the first

**Basketball:** This summer, Fermilab basketball teams were divided by divisions, sections, and experiments. The summer league recently concluded with a championship game victory by the FESS/Business Services team (above). "The championship game was highlighted by the dominating performance by Lou Kula," said Business Services' Brian Niesman.



**Golf:** Fermilab teams have teed-off at Saint Andrews golf course in West Chicago for over 25 years. After a year-long break, a St. Andrews Reunion Scramble was held last Sunday afternoon. Team Rogus (above) edged the field with a -5 stroke victory. "We will continue the scramble in the years to come," said PPD's Patrick Liston.

**Announcements****Bowling League**

Fermilab's Wednesday night bowling league is looking for bowlers for a 30-week, 4-person league. All bowling abilities are welcome. Bowling starts on Wednesday, September 6, at 5:30 p.m. Interested individuals or teams should contact Al Legan x4074, or Robert Hively x4467.

**Fermilab Association of Rocketry**

The Fermilab Association of Rocketry is having their monthly club meeting today, August 16, at 5 p.m. in Users Center TV room. We are always looking for new members; anyone interested in model rocketry is most welcome. Join the club at the meeting and have this year's membership dues waived.

**International Folk Dancing**

International Folk Dancing will meet Thursday, August 17, in Ramsey

moments after the Big Bang, neither quite works.

[Read More](#)

Auditorium in Wilson Hall. Dancing begins at 7:30 p.m. with teaching earlier in the evening and request dancing later on. Newcomers are welcome and you do not need to come with a partner. The group will move back to Kuhn Barn in September. Info at 630-584-0825 or 630-840-8194 or folkdance@fnal.gov.

[Upcoming Activities](#)