

## Calendar

Tuesday, October 5

3:00 p.m. Special Theoretical  
Astrophysics Seminar - Curia II  
Speaker: J. Ostriker, Princeton  
University

Title: Early Ionization of the Universe  
from Stars and Black Holes

3:30 p.m. DIRECTOR'S COFFEE  
BREAK - 2nd Flr X-Over

THERE WILL BE NO ACCELERATOR  
PHYSICS AND TECHNOLOGY  
SEMINAR TODAY

Wednesday, October 6

3:30 p.m. DIRECTOR'S COFFEE  
BREAK - 2nd Flr X-Over

4:00 p.m. Fermilab Colloquium -  
Auditorium (NOTE LOCATION)

Speaker: B. Holmes, San Jose State  
University

Title: The Physics of Brass Musical  
Instruments

## Wilson Hall Cafe

Tuesday, October 5

Chicken and Rice soup

Mushroom Swiss Burger \$4.75

Baked Meatloaf with a Roasted Tomato

Demi-Glace \$3.75

Parmesan Baked Fish \$3.75

Southwestern Turkey Wrap \$4.75

Ham & Pastrami Calzones \$3.25

Souther of the Border Burritos with

Chips & Queso \$4.75

[Wilson Hall Cafe Menu](#)

[Chez Leon](#)

## Weather

## Proton Driver Workshop Starts Tomorrow

What new physics could come out of a more intense proton beam? Starting tomorrow, and for the rest of the week, the [Fermilab Proton Driver Workshop](#) will aim at answering that question.

"The purpose of the workshop is to try to explore what kind of information we could get from new experiments using a proton driver," said Steve Geer, the workshop's

lead organizer.

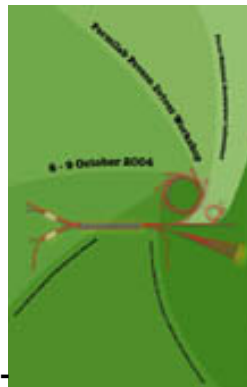
The Fermilab Long-Range Planning Committee (LRP) found last spring that a proton driver

a new proton source with up to five times the intensity, i.e., five times

more protons - should be a leading candidate for the laboratory's development well into the next decade.

"Fermilab should carry the torch for accelerator-based particle physics in the U.S. and the world, and an enhanced proton source is a very attractive option," said LRP chair Hugh Montgomery.

A more intense proton beam could help produce more neutrinos for the NuMI/MINOS program and its



[The Proton Driver Workshop starts tomorrow.](#)  
(Click on image for larger version.)

## Director's Corner

### Good Morning!

From our laboratory's earliest days, neutrino beams have had a leading role in Fermilab physics. Fermilab neutrino experiments elucidated the



[Mike Witherell](#)

structure of the nucleon and pointed the way to the W and Z bosons before they were observed at colliders. More recent neutrino experiments here provided precise measurements used to predict the Higgs mass and observed tau neutrino interactions for the first time.

A new Fermilab neutrino program is well under way, designed to exploit neutrino oscillations to understand the nature of neutrino mass. The MiniBooNE experiment has been running for two years in the Booster neutrino beam, looking for evidence of a fourth neutrino species. The MINOS experiment will soon start observing neutrinos produced by the NuMI neutrino beam, the first time accelerator-produced neutrinos will be studied over such a long distance. The proposed NO A experiment would use a much larger detector to observe rare interactions with the NuMI neutrinos. We can count on exciting results from these and perhaps other Fermilab neutrino experiments for years to come.



Sunny 60°/38°

[Extended Forecast](#)

[Weather at Fermilab](#)

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successors - yielding data five times faster - and perhaps could open up the possibility of other new experiments using a variety of secondary beams in the post-CDF and DZero era.

By the end of 2004, Fermilab's Proton Driver Study Group will complete a report on the physics goals and the technical implementation of such an upgrade. While at least two proton driver designs are under consideration (see article in the [May](#) issue of FermiNews), this workshop will focus on the physics side.

The workshop will include plenary sessions and parallel sessions divided into six working groups, corresponding to different possible kinds of experiments: Neutrino Oscillations, Neutrino Interactions, Muons, Kaons and Pions, Antiprotons, and Tevatron Collider.

### Colloquium Strikes Up Band: Physics of Brass Instruments



This week the Fermilab Proton Driver Workshop, will look at additional physics opportunities that an intense source of protons would open up. As it has in the past, neutrino physics will take center stage.

### In the News

#### From Yahoo! News, October 5, 2004

Three Americans Share Nobel Physics Prize

by Matt Moore, Associated Press  
Writer

STOCKHOLM, Sweden - Americans David J. Gross, H. David Politzer and Frank Wilczek won the 2004 Nobel Prize in physics on Tuesday for their explanation of the force that binds particles inside the atomic nucleus.

Their work has helped science get closer to "a theory for everything," the Royal Swedish Academy of Sciences said in awarding the physics prize.

[Read more](#)

#### From AAAS, October 1, 2004 Updated Status of FY 2005

Appropriations

FY 2005 begins today, but the FY 2005 budget is far from complete. Only 1 of the 13 appropriations bills (for DOD) has been signed into law. Congress has approved a continuing resolution (CR; temporary appropriations bill) extending funding for the 12 unsigned appropriations bills at FY 2004 levels through November 20. Congress will try to complete some of the remaining bills before the October 8 target adjournment date, but most will be resolved in a post-election lame duck session in an omnibus appropriations

Robert Preston as Harold Hill, "The Music Man:" bandleader and acoustical physicist.

When "76 Trombones Led the Big Parade" under the direction of "The Music Man," they were also demonstrating the effects of standing waves inside a tube.

In his [Fermilab Colloquium](#) presentation, physicist Brian W. Holmes of San Jose State University will expand on "The Physics of Brass Musical Instruments; or, Why French Horn Players Put Their Hand Inside the Bell," on Wednesday afternoon at 4:00 p.m. in Ramsey Auditorium. Holmes will also build a trumpet during his talk, showing the acoustical significance of each segment of a brass instrument: mouthpiece, conical lead pipe, cylindrical section and flared bell. There are bound to be additional surprises as well.

"I have a trunk outside my office that he shipped here, and it's full of stuff," said Colloquium host Cathy Newman Holmes (no relation) of PPD. "In my contacts with him about the presentation, he said he needed a piano and piano player. When I asked what kind of microphone he needed, his answer was, 'Oh, I'll be



French Horn

walking around on the stage and tootling on a lot of different instruments."

Newman Holmes, sponsoring her first Colloquium, said she

bill.

[Read more](#)

## From the *Interactions News Wire*, October 4, 2004

Professor Dr. Rolf-Dieter Heuer  
Appointed as New Research Director  
On its meeting on October 1, 2004, the Administrative Council of the Helmholtz center DESY appointed Professor Dr. Rolf-Dieter Heuer as the new research director for high-energy physics. He takes over from Professor Dr. Robert Klanner, who decided after his five-year term of office to dedicate himself to teaching and research again.

[Read more](#)

## Announcements

### Recreation Office Strength Training Class

#### Free Class & Fall/Winter Schedule

There will be a FREE class on October 12. You must register with the Recreation Office for this class. If you are not a Recreation Facility member, we will give you access for this class. The Muscle Toning Class schedule for Fall/Winter is October 19 - November 18. This 5 week class is \$40.00. The 4 week class runs from November 23 to December 21 and costs \$32.00 Classes are held on Tuesday and Thursday, from 5:30 - 6:30, in the Recreation Facility exercise room. The registration deadline is the Friday before the start of the session. You must be a current facility member to participate. Registration can be made in the Recreation Office, by mail (registration form found on the Recreation webpage) or by phone using a credit card.

encountered Holmes's presentation at an American Physical Society meeting a few years ago, and remembered it as one of the better talks of the conference. "He's very lively," she said.

Holmes concludes his talk with a performance of Beethoven's Sonata in F, Op. 17 for horn and piano. He will play a valveless instrument similar to those of Beethoven's time, offering a practical demonstration of why French horn players put their hand inside the bell.

#### **Power Outage News**

**MP9, MW9, and MAB**

**October 9, Feeder 40 work will begin at 7:00 a.m.; no power to these areas for eight hours**

#### **Cancellations**

**The following scheduled power outages have been canceled: October 5, 6, and 7 for Meson areas MS1, 2, 3, MDB, MS6 and 7. The October 8 power outage has also been cancelled for the following Meson substations: ML5, 12, & 14, and for the Meson Cryo Central building.**