

Calendar

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

Thursday, October 7

2:30 p.m Theoretical Physics Seminar -

Curia II

Speaker: Y. Grossman, Technion

Title: Soft Leptogenesis

3:30 p.m. DIRECTOR'S COFFEE

BREAK - 2nd Flr X-Over

THERE WILL BE NO ACCELERATOR

PHYSICS AND TECHNOLOGY

SEMINAR TODAY

Wilson Hall Cafe

Wednesday, October 6

Portoabello Harvest Grain

Santa Fe Chicken Quesadilla \$4.75

Garlic Herb Roasted Pork \$3.75

Seafood Jambalaya \$3.75

Roast Beef on Ciabatta with Red

Pepper Mayo \$4.75

Meatlover's Pizza \$2.75

Pesto Shrimp Linguini with Leeks &

Tomatoes \$4.75

[Wilson Hall Cafe Menu](#)

[Chez Leon](#)

Weather

Director Issues Proton Driver Statement

As the Proton Driver Workshop begins, Director Michael Witherell has issued an official "[Fermilab Statement on a Proton Driver.](#)"

Fermilab QCD Contributions Extend Back Three Decades

The foundation for the 2004 Nobel Prize in Physics that went to David Gross, David Politzer and Frank Wilczek (along with \$1.3 million) extends back to their own work

1973. But it also extends to many researchers and many experiments working to build the field of quantum



Keith Ellis co-authored

chromodynamics, "[QCD and Collider Physics](#)" in 1996 including significant contributions from Fermilab.

Arie Bodek of the University of Rochester won the prestigious 2004 Panofsky Prize in experimental physics "for his broad, sustained, and insightful contributions to elucidating the structure of the nucleon, using a wide variety of probes,

tools and methods at many laboratories" including Fermilab.

Mark Strovink of Lawrence Berkeley Lab was a prominent member of Fermilab muon experiment E26 from

Shutdown News

NuMI prepares for test beam in December



Under construction: the NuMI beam line (Click on image for larger version.)

The Fermilab accelerator complex is in the seventh week of a scheduled shutdown that will continue approximately until the end of November. One of the main shutdown tasks is the work on the Neutrinos at the Main Injector (NuMI) beam line.

"Work in the Main Injector tunnel is proceeding on schedule," said NuMI department head Bruce Baller. "We can finish all installation work, alignment, vacuum hookup plus the testing of devices before the end of the shutdown." The NuMI project will devote the last week of the shutdown to test all devices installed during the shutdown, checking the accuracy of magnetic fields and "exercising" instrumentation. The testing will minimize access time to the tunnel when the Main Injector is back in operation, providing beam for Collider Run II.

The critical path to starting the new MINOS neutrino experiment is the completion of the NuMI target hall.



Sunny 73°/58°

[Extended Forecast](#)

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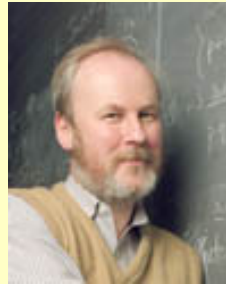
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Bill Bardeen

1970 to 1974, an original observer of the "scaling patterns" predicted by QCD. Fermilab theorist Bill Bardeen was among those who "established the standard framework for describing the data," as cited by colleague Chris Quigg.

Keith Ellis, former Head of Theoretical Physics, co-authored "QCD and Collider Physics" in 1996 with Bryan Webber of Cavendish



Keith Ellis

Laboratory, University of Cambridge, and James Stirling, University of Durham. The book is both a graduate-level textbook and a standard reference across particle physics (and still available for \$48).

[read more](#)

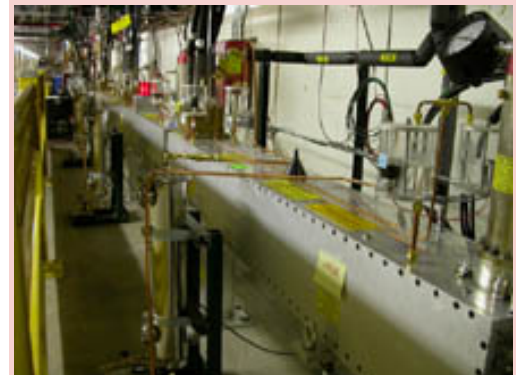
Roads & Grounds Receives First Annual Industrial Hygiene Award



Jed Brown (left) and Dave Baird (middle) presented the first annual Industrial Hygiene Award to Mike Becker (right). (Click on image for larger version.)

This week employees will move the 4-foot-long NuMI graphite target from the MI-8 building to the target hall 150 feet underground, where it will be attached to a remotely operated target module. In early January, the NuMI beam line will begin to smash high-intensity proton beams into the target, producing vast numbers of neutrinos for the MINOS experiment. The neutrinos will travel through the MINOS near detector, located at Fermilab, and then will go 450 miles straight through the Earth to the MINOS far detector, located in a mine in Soudan, Minnesota.

The NuMI department plans to conduct a small beam test in December. "As soon as the Main Injector returns to stable operation, which we assume will be at the beginning of December, we plan to take test beam on a weekend," said Baller. The main goal of the test is for the NuMI beam line to transport a low-intensity proton beam, less than 100 pulses, from the Main Injector along the new beam line to the NuMI target. From there the beam will continue its journey to the absorber, where it will be stopped. NuMI technicians will use the rest of December to practice the operation and maintenance of equipment.



On September 1, Fermilab's Roads & Grounds Department received the first annual Industrial Hygiene Award in recognition of their consistent awareness and control of potential physical, biological and chemical hazards in routine work activities. Jed Brown, Associate Director for Operations Support, and Dave Baird, Industrial Hygiene Sub-Committee Chair, presented the award to Mike Becker of Roads & Grounds.

Pesticide application, grounds maintenance and wildlife control are just a few of Roads & Grounds' work activities that have potential industrial hygiene hazards. "Industrial Hygiene really means safety," said Brown. "From grounds maintenance to snow plowing, everything that you do is amazing."

The Industrial Hygiene Sub-Committee originally intended to recognize a specific individual at Fermilab, but it quickly became clear that nominating only one person from Roads & Grounds would be very difficult. "It is only fitting that you get recognized as a group because you accomplished this as a group," said FESS Head Dave Nevin, who also attended the award ceremony. "I congratulate you as I do all the time." After the award ceremony, the entire Roads & Grounds department was treated to pizza.

In the News

NuMI currently tests kicker magnets that were installed during this shutdown. (Click on image for larger version.)

Stage is Set Today For A Brassy Colloquium

Physicist Brian W. Holmes of San Jose State University explains and demonstrates

"The Physics of Brass Instruments" in today's [Fermilab Colloquium](#) at 4 p.m. in Ramsey

Auditorium. Holmes will build a trumpet to show the function

of each segment of the instrument. The talk finishes on a high note with the performance of Beethoven's Sonata in F, Op. 17 for horn and piano, as Holmes plays on valveless instrument similar to those used in Beethoven's time.



Announcements

Fermilab Participates in St. Charles Scarecrow Festival This Weekend
Fermilab will have a booth with hands-on science activities for kids at the St. Charles Scarecrow Festival this weekend. The booth will be located in Family Fun Square A. Don't forget to check out Fermilab's Einstein scarecrow in the Scarecrow Display area!

[more information](#)

Fermilab Film Series Friday
The Fermilab Film Series will present Henry V on Friday at 8:00 p.m. in Ramsey Auditorium.

[more information](#)

International Folk Dancing
International Folk Dancing at 7:30 p.m.

From *ABC News*, October 5, 2004

Americans Share Nobel Physics Prize
Three Americans won the Nobel Prize in physics Tuesday for revealing how forces in the atomic nucleus keep it from flying apart – a discovery that has brought science one step closer to a "grand unified theory" of how the universe operates at the subatomic level.

...Their achievement cemented the theory of quantum chromodynamics, or QCD, which describes the interactions of quarks and other subatomic particles inside the nucleus.

"All of us have talked about this for a long time as a very significant piece of work," said Chris Quigg, a theoretical physicist at the Fermi National Accelerator Laboratory. "There's a before the work that these people did and an after, and the after is much more glorious."

[Read more](#)

at the Geneva American Legion Post, 630-584-0825 or 630-840-8194 or folkdance@fnal.gov.

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.