

Calendar

[Have a safe day!](#)

Wednesday, August 12
Noon
Medical Health Seminar - One West
Speaker: Sean Rardin, Provena
Medical Group
Title: Health After 50
3:30 p.m.
DIRECTOR'S COFFEE BREAK - 2nd
Flr X-Over
THERE WILL BE NO FERMILAB
COLLOQUIUM THIS WEEK

Thursday, August 13
2:30 p.m.
[Theoretical Physics Seminar](#) - Curia II
Speaker: John Laiho, Washington
University, St. Louis
Title: The Neutral Kaon Mixing
Parameter from Lattice QCD
3:30 p.m.
DIRECTOR'S COFFEE BREAK - 2nd
Flr X-Over
THERE WILL BE NO
ACCELERATOR PHYSICS AND
TECHNOLOGY SEMINAR TODAY

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

Campaigns

[Take Five](#)[Tune IT Up](#)

Weather



Sunny
84°/58°

[Extended Forecast](#)
[Weather at Fermilab](#)Current Security
StatusFrom *symmetrybreaking***Fermilab in the house: atom smasher gets its own rap**

Funky49, a.k.a. Steven Rush from Tampa Florida, performs the Fermilab rap, "Particle Business," for a Fermilab audience on Tuesday.

...rock stars of physics, particle business
smash matter, antimatter and witness
quarks, bottom to top they don't stop
'where the Higgs at?' yo that's their mark
'where the Higgs at?'

— **Funky49, "Particle Business"**

Check it: sick rhymes and sweet beats meet hardcore science. Physics rap is in the house.

Before you say, "I've heard that before," listen up—this isn't the [Large Hadron Rap](#), the surprise sensation that's already logged more than 5 million views on YouTube. There's a brand-new riff on particle physics, created by rapper and science enthusiast [Funky49](#), a.k.a. Steven Rush. It's called the [Fermilab Rap, or "Particle Business,"](#) and it's a tad slicker and a touch edgier than any physics rap you've heard before.

"I didn't want to do a facsimile of the LHC rap," Rush explained before the rap's premier performance Tuesday at Fermilab. "I wanted Fermilab to have its own voice."

So did Ben Kilminster, a physicist on Fermilab's CDF experiment and singer in CDF's resident rock band, the Drug-Sniffing Dogs. He read about Rush's previous project, an album promoting the Museum of Science and Industry in the artist's native city of Tampa, Florida, and suggested that the rapper turn his creative energy toward America's leading particle accelerator.

"It's true that the main motivation was to compete with the LHC rap, but overall I think just think it's a fun addition," Kilminster said. "Some people will never want to watch it, but for others, it might be the only way they learn something about Fermilab."

From Center for Particle Astrophysics

Understanding our universe

Craig Hogan, the head of the Center for Particle Astrophysics, wrote this week's column.

The mission of the High Energy Physics program is to understand how our universe works at its most fundamental level. We do this by discovering the most elementary constituents of matter and energy, exploring the basic nature of space and time itself, and probing the interactions between them.



Craig Hogan

--- Mission statement, DOE Office of High Energy Physics

Physics combines two seemingly incongruous ways of thinking about our universe: a quantum theory that describes the behavior of elementary particles and fields, and a classical theory that describes space and time as a dynamical, curved surface on which those particles move.

Somehow, these two different structures are deeply connected and interact with each other, yielding a single operating universe. But how? That's what our theorists and experimenters are trying to figure out. Our research program looks beyond particles and space-time. It explores the connections among various research areas to move closer towards a unified view of how everything fits together.

Our current theoretical framework defines positions in space and time by pointlike events, which only have a real physical meaning when particles or other objects are present. But it's also true that the space-time continuum itself contains energy, even without particles. Paradoxically, the most powerful flows of energy in the universe involve no particles. They are gravitational waves—vibrations of pure space-time that are most strongly emitted by merging black holes, themselves also made of pure space-time. On the other hand, Stephen Hawking has taught us that even an isolated black hole, left on its own for a very long time, evaporates into particles. Clearly, particles and space-time are closely connected.

Will we ever find a theory that correctly describes this

[Secon Level 3](#)[Wilson Hall Cafe](#)

Wednesday, August 12

- Portabello harvest grain
- Santa Fe chicken quesadilla
- Hoisin chicken
- Parmesan fish
- Cuban panini
- Assorted sliced pizza
- Pesto shrimp linguini w/leeks & tomatoes

[Wilson Hall Cafe Menu](#)[Chez Leon](#)

Wednesday, August 12

Lunch

- Chicken Enchiladas
- Mexican Rice
- Confetti Salad
- Pineapple Flan

Thursday, August 13

Dinner

- Closed

[Chez Leon Menu](#)

Call x3524 to make your reservation.

[Archives](#)[Fermilab Today](#)[Result of the Week](#)[Safety Tip of the Week](#)[User University Profiles](#)[ILC NewsLine](#)[Info](#)[Fermilab Today](#)

is online at:

www.fnal.gov/today/Send comments and suggestions to:
today@fnal.govVisit the Fermilab
[home page](#)[Read more](#)-- *Rachel Carr*

Steven Rush, a.k.a. Funky49, gives a presentation on rap as an education tool.

[Readers write](#)**Fermilab poetry**

Editor's note: In response to the article in Parade on the search for the Higgs boson (see Fermilab Today, July 27, 2009), we received the following poem from Tom Greening, author of "Words Against the Void."

QUARK

I wandered lonely in the dark
until I came upon a quark.
Because I'm not a physicist
I told the quark I must insist
that it explain itself to me
and not remain a mystery.
The poor quark tried but quite in vain,
and thus it is I still remain
quite ignorant and very sad
that I can't work at Fermilab.

--Tom Greening, California

Special Announcement**Registration now open for
Workshop on Applications of
High-Intensity Proton
Accelerators**

Registration is now open for the Workshop on Applications of High-Intensity Proton Accelerators, which will take place at Fermilab Oct. 19-21. Workshop attendees will discuss the challenges for building a high-intensity proton accelerator, focusing specifically on superconducting linear accelerators and their potential applications for such areas as discovery science, nuclear energy and waste transmutation. The workshop will help

connection? Candidates for a theory of everything, such as string theory and matrix theory, show that a unified description may be within reach. But we can only interpret these theories and understand their connection to real-world phenomena through real-world experiments, in the same way that the development of quantum theory was shaped by real measurements.

The research program at Fermilab aims to make these groundbreaking experiments and observations, achieving the mission "to understand how our universe works at its most fundamental level."

Safety Update**ES&H weekly report****August 11, 2009**

This week's safety report, compiled by the Fermilab ES&H section, includes five incidents, including one near miss and one recordable case. The recordable injury involved a subcontractor, who felt muscle pain in their back when unloading a heavy bag of garbage. We have now worked three days without a recordable injury.

Find the full report [here](#).[Safety report archive](#)**Announcements****Latest Announcements**

[Fred Garbo Inflatable Theatre - great family fun on Fermilab Arts Series - Nov. 7](#)

[The Night Before Christmas Carol - Holiday fun at Fermilab Arts Series - Dec. 5 tickets available now](#)

[American Cancer Society open house today](#)

[Buttered Rum performs at Fermilab Arts Series Oct. 24](#)

[Mosaico Hispanico - Celebrating Hispanic music and dance - Sept. 19](#)

[Bike rack etiquette](#)

[Newcomers Brown Bag Lunch Aug. 12](#)

[URA Visiting Scholars Program now accepting applications](#)

[Bristol Renaissance Faire discount tickets](#)

enable the design of Project X and other future accelerators that may use superconducting radiofrequency technology.

[Read more](#)

In the News

Rapper Funky49 rocks out about Fermilab

From **Daily Herald**,
August 12, 2009

You could call Steve Rush's music "School House Rock" on steroids.

The 32-year-old science enthusiast and moonlighting rap artist from Tampa, Fla. was commissioned in May by Batavia's Fermilab to write and record a rap song about their National Accelerator Laboratory.

On Tuesday evening Rush, known by the moniker "Funky49" to the science rap community, came to Fermilab for a communication seminar on using rap as a teaching tool, he also performed the 'Fermirap' song. Rush will spend the next two days filming a music video for the song at Fermilab that will eventually be released on YouTube.

[Read more](#)

[Six Flags Great America discount tickets](#)

[Pool memberships available in the Recreation Department](#)

[Raging Waves Waterpark online discount ticket program](#)

[Yoga Class - Aug. 11 - Sept. 29](#)

[Muscle Toning Class - Aug. 4 - Sept. 28](#)

[Health after 50 seminar](#)

[The University of Chicago Tuition Remission Program Aug. 17 deadline](#)

[Fermilab Blood Drive Aug. 25 and 26](#)

[What's New in NI LabVIEW 2009? Aug. 27](#)

[Office 2007 New Features class offered in September](#)

[Process piping \(ASME B31.3\) class offered in October and November](#)

[Additional Activities](#)

[Submit an announcement](#)