

Minnesota Microscopy Society

Local affiliate of the *Microscopy Society of America*
and the *Microanalysis Society*



Newsletter

September 2012

Finding the Higgs: How we got there and what does it mean?

Roger Rusack, Ph.D.

Physics Professor, [University of Minnesota](#)
Collaborator, [CMS experiment at CERN](#)



Star Tribune

Date

Thursday, October 4, 2012

Schedule

- 5:30 p.m. Check-in/social hour
- 6:30 p.m. Dinner
- 7:30 p.m. Speaker

Location

[Earle Brown Heritage Center](#), north of
downtown Minneapolis in Brooklyn Center
Google map: <http://bit.ly/q3Qa5r>



Reservations

Cost for the fall program is \$25 for members, \$15 for students. Reservations are being taken through **11:59 p.m. on Friday, September 28**. Reservations may be made by going to the MMS website's Calendar of Events page at <http://www.mnmicroscopy.org/calendar.html>.

MMS Fall Kickoff Event – Finding the Higgs, How We Got There and What Does It Mean

continued

Speaker Bio

Professor Rusack has been a member of the University of Minnesota faculty since 1993, and since graduate school has been working in the field of high energy particle physics. Born in London, educated at Liverpool University and Imperial College London, he did his graduate work at the Fermi National Accelerator near Chicago. Equipped with a Ph.D., he joined Columbia University working with Professor Leon Lederman (Nobel Prize Laureate in Physics, 1988) on measurements to probe the new ideas of quantum chromodynamics. Later moving to Rockefeller University, he worked at CERN measuring the internal structure of the proton. He returned to the U.S. in 1988 (in his own 34-foot sailing boat) to work on the Superconducting Super Collider (SSC) to design and build an experiment to find the Higgs and new physics that might be accessible at the highest energies. In 1993, when the SSC was canceled he joined the CMS collaboration to design and build the CMS experiment for the Large Hadron Collider (LHC), a scaled down version of the SSC, at CERN. The fruition of this effort was the observation of the Higgs, or a Higgs-like particle, this year in data collected at an energy of 8 tera-electron volts.



Abstract

ROGER W. RUSACK
The School of Physics and Astronomy
University of Minnesota

In my talk I will describe how devices that we had to build are made, some of the problems we had to solve and what we had to do to find the Higgs. I will conclude with a very brief discussion of what it means.

Learn More

[Roger Rusack](#)
University of Minnesota personal home page

[“U prof a player in Higgs particle puzzle”](#)
Minneapolis Star Tribune, July 6, 2012

[University physicists play key role in search for Higgs boson](#)
University of Minnesota, School of Physics & Astronomy News, July 27, 2012



2012:

September 5 **What:** **JEOL Seminar: Another View From the NanoWorld**
Sponsors: JEOL and ThermoFisher Scientific, hosted by Medtronic
Location: Medtronic World Headquarters
 Fridley, MN
RSVP: to Robb Mierzwa at mierzwa@jeol.com
Details: <http://bit.ly/JEOLseminar> (pdf)

September 28 **What:** **Hans Ris Symposium on 3D Electron Microscopy**
Location: University of Wisconsin
 Madison, WI
Details: <http://bit.ly/hansrissymposium2012>

November 3 **What:** **Microscope Day**
Time: 1:00 – 4:00 pm
Location: Science Museum of Minnesota
 St. Paul, MN



Anyone interested in volunteering, please contact Ann Palmer:
palme003@umn.edu

November 6 **What:** **MMS / Sigma Zeta Joint Meeting**
Location: Bethel University
 Arden Hills, MN

November 17 **What:** **Project MICRO – Math & Science Family Fun Fair**
Time: 10:00 am – 4:00 pm
Location: Coffman Union, University of Minnesota
 Minneapolis, MN

Anyone interested in volunteering, please contact Jeff Payne:
jjpayne@mmm.com



2013:

January 17

What: Student Poster Session

Time: 4:00 – 8:00 pm

Location: Nils Hasselmo Hall, University of Minnesota
Minneapolis, MN

March 28

What: Minnesota Technical Symposium ([MinnTS](#))

Time: 5:00 – 9:00 pm

Location: Medtronic World Headquarters
Fridley, MN

May 3

What: Spring Symposium

Location: Minnesota Science Museum
St. Paul, MN

Opportunities

Advanced Light Source beamline 10.3.2, a hard X-ray microprobe for environmental and materials sciences, needs a new Project Scientist. This is a 2-5 year position described in the job posting here: <http://go.lbl.gov/74734>. If you know an appropriate venue at which to post this announcement or know a qualified person who might be interested, we would appreciate it if you would spread the word.

Reminder: MMS Moved to *PayPal*™ This Year!



In 2012, MMS moved to PayPal for processing payments made via credit card. With the former system, MMS paid a fixed monthly fee to maintain the service, even if no transactions occurred, in addition to any per transaction fees. The majority of credit card transactions occur in September to November and February to May. Even though the per transaction fee is slightly higher with PayPal, eliminating the monthly fees results in a significant savings to MMS.

Moving to PayPal also provides a somewhat simplified process for making reservations for society meetings. Going forward, the "Calendar of MMS Events" link in the upper left corner of the MMS website home page will lead to a list of events for the year with a PayPal link to make your reservation and pay the registration fee. For those unable or unwilling to use PayPal, pay-at-the-door reservations will continue to be taken via telephone or e-mail. Pay-at-the-door will be cash or check only as we will no longer have a way to process credit card payments outside of PayPal.

MMS Corporate Sponsors

Corporate Sponsors are the backbone of financial support for the Society. These members make it possible for the Society to support Project Micro and to cover many expenses of the regular meetings and the Spring Symposium. MMS gratefully acknowledges the Corporate sponsorships provided by the following companies in 2012-2013. To become a Corporate Sponsor, complete and return the MMS membership form at the end of the newsletter.

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Minnesota Microscopy Society – Membership Form

All microscopists are urged to support their Society at one of the membership levels offered below. Often, supervisors will support MMS memberships out of their project budget because they recognize that it is a very inexpensive way to maintain and increase the skills of their microscopists. If you have been a member over the years and recognize the value of MMS to the community of microscopists it serves, consider upgrading your membership this year to the patron or sustaining level. Thank you.

Name _____ Dr Mr Ms Phone (_____) _____

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Address _____ ZIP _____

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(Newsletter notifications will be e-mailed to the address above.)

Check here if you do NOT want your name and address to appear in the Society directory.

Are you an MSA member? MAS Member?

Student (\$5-\$9) Basic (\$10-\$24) Patron (\$25-\$99) Sustaining (≥ \$100)

Payment: Check PayPal (Please go to <http://www.mnmicroscopy.org/MMSMembership.html> to make your payment via PayPal.)

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