

Physics Matters

Summer Research for 2004 in Physics, Biology & Chemistry

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Applications can be found in the Biology, Chemistry and Physics Department Offices for summer research. The due date is **February 20**, so if you haven't already picked up the form, don't delay!

If you have questions, it's best to talk with a research director.

An on-line version may be found at:

<http://www.stolaf.edu/people/ceumb/research.html>

Opportunities include:

Physics

- James Cederberg & David Nitz—*Molecular Beam Spectroscopy*
- David Dahl—*Nanomagnetics*
- Jason Engbrecht—*Positronium Research*
- Robert Jacobel & Brian Welch—*Radar & Satellite Remote Sensing for Ice & Climate Studies*

Biology

- Diane Angel—*Small Mammals and Prairies*
- Eric Cole—*From Genes to Proteins to Cellular Function!*
- Mary Caroline Henry—*Can Insects Learn?*
- Henry Kermott—*Behavior Ecology*
- Jean Porterfield—*Something Fishy About Population Genetics*
- Rob Rutherford—*Bioinformatics of Tuberculosis Latency*
- Kathy Shea—*Forest Ecology*
- Mike Swift—*Aquatic Biology in Northern Minnesota*
- Charles Umbanhowar—*Linkages of fire & climate in Manitoba*

Chemistry

- Douglas Beussman—*Mass Spectrometry*
- Bob Hanson—*Web-Based Chemical Informatics*
- Paul T. Jackson—*Investigating Environmental Contamination in the Cannon River Watershed*
- Gary Miessler—*Dithiolene Complexes of Molybdenum & Tungsten*
- Greg Muth—*Gene Regulation by mRNA-Thiamin Recognition*
- Patrick Riley—*Ligand Synthesis & the Preparation of Transition Metal Complexes*
- Jeff Schweinfus—*Mechanism of DNA Destabilization in Cosolvent-Water Solutions*

Tentative Schedule of Physics Spring Seminars

Spring Semester Seminars 2004

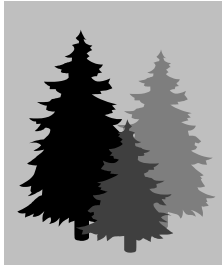
- 2/11: *Chernobyl—the Musical!*, David Varvel and Peter Bodurtha, Students from *Origins of Nuclear Weapons* Interim class (3:00 in SC180)
- 2/11: *Peacemaking as a Vocation*, Erik Cleven '87, Kloeck-Jenson Visiting Professor, Oslo, Norway (a Lilly Lecture at 3:30-5:00 pm in the Viking Theater)
- 2/18: *Kinematic Instrument Design*, John Archibald, Northfield Engineering Co., Northfield, MN
- 2/20: *Aquaporin Water Channels: From Atomic Structure to Clinical Medicine*, Peter Agre, John Hopkins School of Medicine (Chemistry seminar at 9:00 am, room TBA)
- 2/25: *How to Build an Ocean Model with a Liberal Arts Education*, Patrick Haertel '92, University of North Dakota
- 3/3: St. Olaf Molbeam Team (Mike Bongard, John Nichol, Katie Huber & Lee Langer)
- 3/10: *The Emergent Symmetries of Elementary Particles*, Nathan Harshman, Instructor, Dept. of Physics & Astronomy, Rice University
- 3/17: *The Internal Rotation of Methyl Groups: Connections to Radio Astronomy, Peptide Folding, Intramolecular Energy Flow, and things Sometimes Studied by Undergraduates*, Jon T. Hougen, National Institute of Standards and Technology
- 3/31: *Physics of Comic Books*, Jim Kakalios, University of Minnesota

5th Annual Honors Day Science Symposium

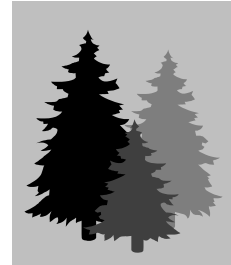
The 5th Annual Honors Day Science Symposium will be held on **Friday, May 7th** this year. The topic chosen for this years symposium is the mathematical theory of Chaos and its applications. The speakers this year come from differing fields of expertise but have found Chaos theory to have important applications in each of their fields. Larry Liebovitch of Florida Atlantic University will speak to the foundation of Chaos theory. Walter Freeman of the University of California at Berkeley will talk about applications of Chaos in understanding brain activity. Finally, Jim Hansen of Massachusetts Institute of Technology will discuss Chaos in weather modeling.

Reminder:

Students who have been involved in a research project since last May (on or off campus) will be invited to submit a poster to present in the Friday, May 7 poster session.



We're on the Web!
www.stolaf.edu/depts/Physics/



On the Lighter Side of Physics!

Q: What did the Nuclear Physicist have for lunch?
A: Fission Chips.

"It's a good thing the guy in charge of naming galaxies was into chocolate bars and not Chinese food. Otherwise, the Milky Way might have been named Moo Goo Gui Pan, and who wants to have to learn about that?"

Wish I Were a Fly on the Wall
by Robert D. Cowan

There once was a fly on the wall
I wonder why didn't it fall
Because its feet stuck
Or was it just luck
Or does gravity miss things so small!?



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