

November 2003

Newsletter

In the Month of November

- Tuesday, November 4 – Devotional: Lawrence M. Vincent *professor of music and voice*
- Tuesday, November 11 – Devotional: Elder Dieter F. Uchtdorf of the *Presidency of the Seventy of the Church of Jesus Christ of Latter-day Saints*
- Tuesday, November 18 – Forum: Robert Alter, *professor of Hebrew and comparative literature at the University of California at Berkeley*
- Tuesday, November 25 – No Devotional Friday Instruction
- Thursday, November 26 – Holiday: *Thanksgiving*

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College of Physical and Mathematical Sciences

Honored Alumni Lecture

Our 2003 Honored Alumnus was Dr. Berthold W. Weinstein, Acting Associate Director of the Biology and Biotechnology Research Program at Lawrence Livermore National Laboratory. Bert graduated from BYU with a double major in Physics and Mathematics in the early 1970s. During

Homecoming Week he presented a stimulating lecture on the importance of interdisciplinary research in solving scientific problems of importance to the welfare of society. Bert is working on a version of his lecture that could be made available on the college web site in the near future.

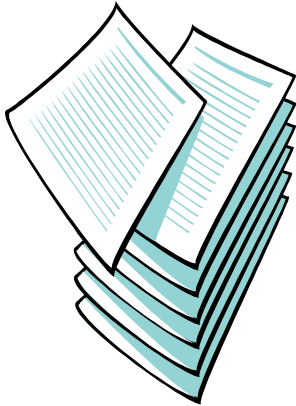
Also during Homecoming Week, several departments held activities for the alumni. We appreciate very much the efforts of faculty and staff in maintaining close relationships and positive interactions with our alumni and friends.

Undergraduate Mentoring DVD Available

You may recall seeing a nearly-finished video on undergraduate mentoring during our University Conference college meeting. The video has now been completed and mass produced in DVD format. We will be sending DVDs to alumni and other potential donors, but they may be of use to faculty members who are involved in recruiting, high school presentations, or other activities at which highlighting undergraduate research opportunities would be productive. If you would like a copy for such use, or if there is someone in particular that you feel would benefit from seeing it, please contact the dean's office.

BYU Students Win Awards

Recently, five BYU students from the Department of Physics & Astronomy won outstanding paper awards at the American Physical Society Four Corners Section meeting held in Tempe, Arizona on October 24-25, 2003. These five students were selected out of 12 total awards given in this 4-state region. Each student received \$100.00 and a book.



Carolee Blackham (undergraduate)
V802 Aq1, a W Ursae Majoris Eclipsing Binary

Thomas Butler (undergraduate)
Specific Heat-Phonon Spectrum Inversion by Odd Hermite Expansion

Sarah Stokes (high school student doing research in the BYU Department of Physics & Astronomy)
Chemo-Mechanical Surface Patterning of Germanium Surface Using an Atomic Force Microscope

Melinda Tonks (undergraduate)
Nanoscale Chemomechanical Surface Patterning Using an Atomic Force Microscope

Jed Whittaker (graduate student)
Measurement of the Mechanical Adhesion between a Single-Walled Carbon Nanotube and a Silicon Dioxide Substrate



College Publications

Department of Chemistry and Biochemistry

M.B. Andrus, E.J. Hicken, E.L. Meredith, B.L. Simmons, and J.F. Cannon, "Selective Synthesis of the para-Quinone Regio of Geldanamycin," *Org. Lett.*, **5(21)**, 3859-3862 (2003).

J. Barthel, D. Henderson, and A. Trokhymchuk, "Sixtieth Birthday of Myroslav Holovko," *Condensed Matter Physics*, **6**, 365-367 (2003).

E. Spohr, A. Trokhymchuk, E. Sovyak, D. Henderson, and D. Wasan, "Computer Simulations of a Monolayer of Like-charged Particles Condensed on an Oppositely Charged Flat Area," *Molecular Simulations*, **29**, 755-760 (2003).

H. Wang, E. Carlson, D. Henderson and R. Rowley, "Molecular Dynamics Simulation of the Liquid-liquid Interface for Immiscible and Partially Miscible Mixtures," *Molecular Simulations*, **29**, 777-785 (2003).

G. Jiang, T.L. Niederhauser, S.D. Davis, Y.-Y. Lua, B.R. Cannon, M.J. Dorff, L.L. Howell, S.P. Magleby, and M.R. Linford, "Stability of Alkyl Monolayers on Chemomechanically Scribed Silicon to Air, Water, Hot Acid, and X-rays," *Colloids and Surfaces A: Physicochem. Eng. Aspects*, **226**, 9-16 (2003).

Y. Ma, C. Song, W. Jiang, Q. Wu, Y. Wang, X. Liu and M.B. Andrus, "Sonogashira Coupling Using Bulky Palladium-phenanthryl Imidazolium Carbene Catalysis," *Org. Lett.*, **5(18)**, 3317-3319 (2003).

Department of Computer Science

Xiaochun Yang, Bin Wang, and Yiu-Kai Ng, "A Protein Secondary Structure Prediction Framework Based on the Support Vector Machine," *Proceedings of the Fourth International Conference on Web-Age Information Management (WAIM 2003)*, **2762**, 266-277, (2003).

Department of Geology

Mayo, A. L., Nelson, S., Tingey, D., Dutson, S., and Harris, R., "Flux-induced solution weathering in a large displacement fault damage zone," *International Conference on Groundwater in Fractured Rocks - Proceedings*, Krasny J., Hrkal, Z., and Bruthans, J., ed.: IHP-VI, Series on Groundwater No. 7, Prague, Czech Republic, 75-76 (2003).

Department of Mathematics

Guilin Jiang, Travis L. Niederhauser, Steven D. Davis, Yit-Yian Lua, Bennion R. Cannon, Michael J. Dorff, Larry L. Howell, Spencer P. Magleby, Matthew R. Linford, "Stability of alkyl monolayers on chemomechanically scribed silicon to air, water, hot acid, and X-rays," *Colloids and Surfaces A: Physicochem Eng. Aspects*, **226**, 9-16 (2003).

M. Dorff and L. Hall, "Solids in whose area is the derivative of the volume," *College Math J.*, **34(5)**, 350-358 (2003).

Stephen P. Humpheries, "Finite Hurwitz braid group actions on sequences of Euclidean reflections," *Journal of Algebra*, **269** (556-588).

Department of Physics and Astronomy

D. M. Hatch, H. T. Stokes, and W. Cao, "Allowed mesoscopic point group symmetries in domain average engineering of perovskite ferroelectric crystals," *Journal of Applied Physics*, **94**, 5220-5227 (2003)

D. M. Hatch, T. Lookman, A. Saxena, S. R. Shenoy, "Proper ferroelastic transitions in two dimensions: Anisotropic long-range kernels, domain wall orientations, and microstructure," *Physical Review*, **68**, 104105 (2003).

D. R. Trinkle, R. G. Hennig, S. G. Srinivasan, D. M. Hatch, M. D. Jones, H. T. Stokes, R. C. Albers, and J. W. Wilkins, "New mechanism for the alpha to omega Martensitic transformation in pure titanium," *Physical Review Letters*, **91**, 025701 (2003)

D. B. Litvin, V. K. Wadhawan, and D. M. Hatch, "Latent symmetry and domain average engineered ferroics," *Ferroelectrics*, **292**, 65-70 (2003).

H. T. Stokes and D. M. Hatch, "Symmetry of possible average multidomain structures at a phase transition," *Ferroelectrics*, **292**, 59-63 (2003).

N.F. Mangelson, D.D. Argyle, R. Kelley, W.D. Morin, S.M. Washburn, B.M. Clark, L.L. St. Clair, and L.B. Rees, "Elemental analysis of lichens from the western United States: Distribution of phosphorus and calcium from a large data set," *International Journal of PIXE*, **3&4**, 167-173 (2002).

Happy Thanksgiving!

