

April 2004

Newsletter

In The Month of April...

- Tuesday, April 6-
Devotional: Claudia Clayton, an assistant teaching professor of psychology at BYU
- Sunday, April 11 –
Easter Sunday
- Tuesday, April 13 –
Last Day of Class, Winter Semester
- Wednesday, April 21 –
Last Day of Final Exams
- Thursday, April 22 –
Graduation, Commencement Exercises
- Friday, April 23 –
Graduation, Convocations
- Tuesday, April 27 –
First Day of Class, Spring Term

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College of Physical and Mathematical Sciences

Spring Research Conference

The 18th Annual Spring Research Conference, held on Saturday, March 20, provided a forum for nearly 300 undergraduate and graduate students to present the results of their research, spanning every discipline in the college. These students also represent the efforts of 100 faculty mentors. At the

opening session of the meeting, 14 undergraduate students were awarded Annual Fund Undergraduate Mentorships, which, as the name implies, are supported by the President's Leadership Council match to College Annual Fund donations. Many of you contribute to the College Annual Fund,

so your donations benefit not only your department, but the mentored students as well. We very much appreciate your generosity.

The Annual Fund Undergraduate Mentorships were awarded to Tom Anderson (Chemistry & Biochemistry), Robert Bradshaw (Mathematics), Kellyn Farlow (Mathematics Education), Brent Gorbut (Mathematics), Paul Johnson (Statistics), Spencer Jones (Chemistry &

Biochemistry), Carly McKay (Statistics), William Monn (Geology), Rebecca Olson (Physics & Astronomy), Annika Quick (Geology), Jeremy Robertson (Computer Science), Nick Stetich (Computer Science), Mark Transtrum (Physics & Astronomy), and Janel Williams (Mathematics Education).



Annual Fund Undergraduate Mentorship recipients

This year Physics & Astronomy was the responsible department, and we thank Nan Ah You and her students for help with the event. In addition, members of the College Student Council assisted at the refreshment break. A special thanks is due to Koral Burt, who assembled the program book and coordinated the event.

Noise Control in the News...

The work of Scott Sommerfeldt in noise suppression has recently received press coverage from local papers and USA Today. Scott explains that one day, after shutting down his computer and printer, he “couldn’t believe how quiet” the room became. He decided to attack the noise with noise. His solution involves four small microphones and four small speakers that surround the cooling fan in the computer. The microphones receive noise from the fan and signal a microprocessor that drives the speakers to produce sound waves that cancel the fan noise. Sound like an expensive solution? It adds up to around \$20.

Scott points out that it doesn’t eliminate all the noise, because the “whoosh” of air passing over the blades is still there. But it is a significant improvement, and now he and his coauthor, Kent Gee, are going after the “whoosh.” Gee is a former BYU physics student now pursuing a doctorate at Penn State.

“T-Splines” Ties for 2nd Place

The finals of the BYU Marriott School’s Business Plan Competition were held on Friday, April 2nd in the JSB Auditorium. A business plan called “T-Splines” was one of only three finalists out of 55 original business plan submissions. They received \$7,500 to pursue creating a business to market and sell the T-Spline technology as a plug-in

for Maya, a popular animation computer program. The technology can be described as a way to enhance 3D geometric modeling for the purposes of animation or CAD/CAM. The faculty sponsor for the business plan is Tom Sederberg, a faculty member in the Computer Science Department and the creator of the T-Spline

technology. The T-splines business plan team consists of Matthew Sederberg (Economics), Nick North (Computer Science), Tom Finnigan (Computer Science), Dave Cardon (Computer Science), Kyle Welch (Accounting) and Brian Jensen (MBA). For more information, contact Dr. Sederberg at tom@cs.byu.edu.

BYU Team Competes at the ACM World Programming Finals in Prague

On March 31, 2004, BYU’s ‘Tri-lams’ programming team competed in the 28th Annual ACM International Collegiate Programming Contest World Finals held in Prague. The team consisted of Ivan Andrus, Michael “Viper” Bailey and Matthew Reeder and they were accompanied

by Cory Barker of the Computer Science Department. It is quite an accomplishment to even make it to the finals.



3,150 teams from around the world competed in preliminary contests back in

November 2003 and only 72 teams made it to the finals. Even though they did not win the whole event, we are proud of their accomplishment in being able to participate. This is the second year in a row that BYU has sent a team to this event. For more information, visit <http://icpc.baylor.edu/icpc/finals/> or contact Dr. Barker.

Statistics and Mu Sigma Rho

On Tuesday, March 30, the Department of Statistics and Mu Sigma Rho hosted an induction dinner for nineteen new Mu Sigma Rho members at the Old Spaghetti Factory in University Mall. In addition to a delicious meal the group of thirty

enjoyed presenting the “Siggy” (Teacher of the Year) award to Dr. Gil Fellingham. A Statistical Graphics Competition with the theme “Families” was sponsored in March by Mu Sigma Rho. These winners were also announced at the dinner.

announced at the dinner. They were: Winner – Nathan Stephens, First Runner Up – McKay Curtis, Second Runner Up – David Palmer. We congratulate all the new members of Mu Sigma Rho!

Report on the 4th Annual Family History Technology Workshop

The 4th Annual Family History Technology Workshop was held on Thursday, March 25th in the BYU Conference Center and was a great success. David Ouimette, the Information Architect for the LDS Church, started out the day as the keynote speaker and summarized the key issues and concerns of family history technology research. These topics include record linkage;

data, name, place and event normalization; enabling on-line collaboration; digital image conversion and enhancement; better OCR technologies and handwriting recognition; metadata mining and indexing; and family reconstruction. The workshop will be held again next year around the same time. To receive updates about the workshop and research efforts of

computer science department concerning family history, please contact Kendra Hernandez at kendra@cs.byu.edu or visit www.fht.byu.edu.



Eric Hintz Receives Two Grants

Dr. Eric Hintz in Physics & Astronomy recently received two grants. They are an American Astronomical Society Small Research Grant and a Dunham Fund for Astrophysics grant. The first will be used to finish a spectroscopic survey of all northern delta Scuti variables down to 14th magnitude using telescopes at the Dominion Astrophysical Observatory in Victoria, Canada.

The remainder of the grant will be used to purchase two narrow filters centered on the Calcium H and Calcium K lines. These two lines are important for his own delta Scuti work, but they are also used to monitor stars with planets. The second grant will provide half the funding needed to upgrade one of the CCD cameras used on the campus 16" telescope. The new camera head will reduce the noise levels that plague

students during the summer months. This will improve the quality of both student and faculty research. The upgrade should be completed in time for this summer's research season. Our congratulations to Eric.

Awards Given in Geology

Kristine B. Mortenson, Administrative Assistant in Geology, has been awarded the President's Annual Appreciation Award for 2004. This award is for exceptional service, creativity, and competence.



The Geology Awards Banquet where students were recognized for achievement and given scholarships for the coming year was held April 8, 2004 in the BYU Skyroom. Two faculty were also recognized:

Dr. John McBride who received the J. Keith Rigby Research Award and Randy Skinner who was given the Myron G. Best Teaching Award.

Mathematics Alumnus Awarded Sloan Fellowship

Chongchun Zeng, a mathematics PhD alumnus, recently was awarded a Sloan Fellowship. The Sloan fellowship in Math is highly regarded. Nationwide only 116 Sloan fellowships were awarded this year in any subject, and 20 in Mathematics--most of them went to graduates of Ivy League schools.

Also worth mentioning, is that Chongchun Zeng was also awarded an NSF CAREER grant (the most prestigious award the National Science Foundation gives) last year. Congratulations to Chongchun.

College Publications

Chemistry and Biochemistry

A. Huerta, G.G. Naumid, D.T. Wasan, D.J. Henderson, and A.D. Trokhymchuk, "Attraction Driven Disorder in a Hard Core Colloidal Monolayer," *J. Chem. Phys.*, **120**, 1506-1510 (2004).

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T. Kristof, D.J. Henderson, and D. Boda, "Phase Separation in Mixtures of Yukawa and Charged Yukawa Particles from Gibbs Ensemble Monte Carlo Simulations and the Mean Spherical Approximation," *J. Chem. Phys.*, **120**, 2846-2850 (2004)

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J. Zhang, F. Visser, M.F. Vickers, T. Lang, M.J. Robins, L.P.C. Nielsen, I. Nowak, S.A. Baldwin, J.D. Young and C.E. Cass, "Uridine Binding Motifs of Human Concentrative Nucleoside Transporters 1 and 3 Produced in *Saccharomyces cerevisiae*," *Mol. Pharmacol.*, **64**, 1512-1520 (2003).

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Computer Science

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Mathematics

M. Dorff, "Minimal graphs in R^3 over convex domains," *Proceedings of the American Mathematical Society*, **132** (2), 491-498, (2004).

D. Doud, "Wild ramification in number field extensions of prime degree," *Arch. Math*, **81**, 646-649 (2003).

C. E. Cadenas and V. Villamizar, "Comparison of Least Squares FEM, Mixed Galerkin FEM and an Implicit FDM Applied to Acoustic Scattering," **1 (1)**, 128-139 (2004).

L. F. Bakker, "Structure of Group Invariants of a Quasiperiodic Flow," *Electronic Journal of Differential Equations*, **2004 (39)**, (2004).

D. M. Halverson, "2-ghastly spaces with the disjoint homotopies property: The method of fractured maps," *Topology and Its Applications*, **138**, 277-286 (2004).

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M. Ware, S.A. Glasgow, J. Peatross, "Group Delay Description for Broadband Pulses" *Ultra-Wide band, Short-Pulse Electromagnetics VI*, 1-9, (2003).

Physics

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Statistics

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