

Newsletter

College of Physical and Mathematical Sciences

September 2008



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College Welcomes New Faculty

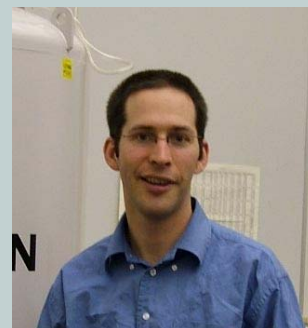


We are pleased to announce Dr. **Shannon Neeley** has accepted a position as assistant professor. Shannon received both her BS and MS in Statistics at Brigham Young University. She then completed her PhD at Rice University in Houston, Texas. Shannon's work, which focused on processing methods for data from reverse-phase protein arrays, allowed her to collaborate with the University of Texas MD Anderson Cancer Center, also in Houston, where she worked under Keith Baggerly.

Shannon is originally from Ohio and resides in Provo. She served a mission in Ecuador and enjoys running and crafting.

Scott Burt (Chemistry & Biochemistry) earned his Ph.D. in Physical Chemistry from University of California, Berkeley under the direction of Alex Pine, and completed his undergraduate studies at BYU receiving a Chemistry B.S. degree in 2004.

Professor Burt's research interests include NMR & MRI application of parahydrogen induced polarization via heterogeneous hydrogenation. He is the recipient of the Department of Homeland Security Graduate Research Fellowship (2005-2008) and the Eric Abramson Memorial Fellowship (2005).



Kenyon Platt (Mathematics) received his Ph.D. in mathematics from the University of Georgia in 2008 under the direction of Brian D. Boe. His main research interest is Representation Theory of Lie Algebras. While working on his Ph.D., Kenyon taught developmental mathematics courses, as well as precalculus, trigonometry, and calculus. His students describe how they appreciated his conscientious teaching, and they report that they learned a great deal from him in those classes.

Professor Platt was supported by an NSF VIGRE fellowship from 2001-2006 and was the co-organizer of the summer graduate student seminar at the University of Georgia. His research on the parabolic category has been described by reviewers as "clever" and "a major breakthrough."

Important Dates & Events in the College

September 2008

College Honored Alumni Lecture

Michael Cannon, Ph. D.
October 9th, 2008
1170 TMCB
11:00 am

National Chemistry Week
October 20-24, 2008
Benson Science Building
6:00 or 7:00 pm

(New Faculty continued from page 1)



The BYU Computer Science Department is pleased to welcome its newest faculty member, **Jay McCarthy**. Professor McCarthy received bachelors degrees from the University of Massachusetts at Lowell in Mathematics and Computer Science, with Economics as a minor. After his graduation in 2005, he entered the PhD program of the Computer Science Department at Brown University, where he worked with Shriram Krishnamurthi. While at Brown, he received an NSF Graduate Research Fellowship and worked in collaboration with the MITRE Corporation. He is a member of the multi-university research group, PLT, that produces PLT Scheme and the Dr Scheme programming environment.

Professor McCarthy's research interests include applying programming languages research techniques to cryptographic protocols and the Web, as well as other areas of security and systems. He is also very interested in theorem provers and program verification. He will share his love for programming languages as he teaches CS 330 (Concepts of Programming Languages) in Fall 2008.

Professor McCarthy and his wife, Elizabeth, welcomed their first son, John "Jack" Day McCarthy into their family on September 8, 2008. When not child-proofing their house, Jay and Elizabeth enjoy extreme cooking and playing board games like Arkham Horror.

Erin Chamberlain (Mathematics) earned her Ph.D. in mathematics from the University of Utah in 2008 under the direction of Paul Roberts. Her research interests include commutative algebra and homological algebra. Erin's graduate work was supported by an NSF VIGRE fellowship.

As a graduate student she taught many courses from college algebra to foundations of analysis and received the outstanding graduate student award in 2005. Erin helped with the Access program, a summer program for incoming freshmen women in the sciences. She was the president of the Association for Women in Mathematics student chapter.

Professor Chamberlain's interests include rock climbing, backpacking, telemark skiing, biking, quilting, and reading. Reviewers describe her as an excellent teacher, a great departmental citizen, and a promising scholar.



Computer Science Faculty Grants

Mike Goodrich and Bryan Morse were awarded an NSF grant to support their research in unmanned aerial vehicles. The title of the grant is, "Supporting Wilderness Search and Rescue Personnel: Acquiring and Visualizing Aerial Imagery."

Dan Ventura was also awarded an NSF grant. The title of his grant is, "Learning to Develop Insight: A Sub-symbolic Approach to Learning Transfer."

BYU Professor Receives National Math Association Teaching Award

Michael Dorff, an associate professor and associate chair in the Brigham Young University Department of Mathematics, has been honored with the 2008 Mathematical Association of America Distinguished Teaching Award for the Intermountain Region.

This award honors professors of mathematics whose efforts have been recognized as influential beyond their own institutions. Dorff is the fourth BYU mathematics faculty member to receive this honor. Previous BYU recipients include James Cannon, Wayne Barrett and Tyler Jarvis.

Dorff is the director of the National Science Foundation-funded Center for Undergraduate Research in Mathematics at BYU and the co-director of the NSF-funded BYU Mathematics Research Experience for Undergraduates.

The Mathematical Association of America, with more than 27,000 members, is the primary professional organization for teachers of undergraduate mathematics. The MAA Intermountain Region includes all colleges and universities in Utah and southern Idaho.



Computer Science Undergraduate Receives Prestigious Scholarship

Kendall Clement, an undergraduate student at BYU pursuing a degree in Computer Science, was recognized by the German Academic Exchange Service (Deutscher Akademischer Austauschdienst - DAAD), an organization promoting higher education in Germany and providing funding to do so, as a scholarship recipient for the academic year 2008/09.



National Chemistry Week

This year National Chemistry Week will be held during the week of October 20-24, 2008. National Chemistry Week is an outreach program sponsored by the American Chemical Society (ACS) and the local Central Utah Section of the ACS. National Chemistry week is an outreach program designed to enhance the public's awareness of the contributions that chemistry makes to society and to our everyday lives. The theme this year is "Having a Ball with Chemistry."

The Department of Chemistry and Biochemistry will be conducting Chemical Magic Shows during National Chemistry Week. The shows last about one hour. The demonstrations are proven crowd-pleasers illustrating important principles of chemistry. Tickets are free and teachers, students, parents, scout troops and members of the general public are invited to attend. Since seating is limited, tickets will be required. Call 422-3667 to reserve your tickets. Tickets go fast, so call soon. Listed below are the dates, times and location of the shows.

Mon, Oct 20, 6:00 PM W III BNSN
Tue, Oct 21, 7:00 PM W III BNSN
Wed, Oct 22, 7:00 PM W III BNSN
Thu, Oct 23, 7:00 PM W III BNSN
Fri, Oct 24, 7:00 PM W III BNSN

Posters describing current research in the BYU Department of Chemistry and Biochemistry and in local companies will be on display in the Benson Science Building west hall October 23 and 24.

Math Department Colloquium and Seminar Information – Fall 2008

Celestial Mechanics Seminar (MWF 12-1, 297 TMCB)

Department Colloquium (T, 4:00, 1170 TMCB) <https://math.byu.edu/info/semHome.php>

Dynamical Systems Seminar (T, 10-11, 297 TMCB) https://math.byu.edu/info/dynsys_semlist.php

Low-dimensional Topology Seminar (TTh 2-3, 294 TMCB)

Mathematical Finance Seminar (T 3-4, 297 TMCB)

Number Theory Seminar (W 4-5, 323 TMCB) <https://math.byu.edu/~xianjin/Fall-08.html>

Quantum Computation Seminar (Th 3-4, 294 TMCB)

S-Rings Seminar (Th, 10-11, 294 TMCB)

Stochastic PDE Seminar (Daily 1-2, 297 TMCB)

Careers in Math Series



Law

Greg Newton, J.D.

Attorney, The Newton Law Firm P.C.

Thursday October 2, 2008 at 4 p.m. in 1170 TMCB

B.S. Mathematics, BYU, 1978

B.S. Accounting, BYU, 1979

Juris Doctorate, BYU, 1982

Medical Research

Michael Cannon, Ph.D.

Research Epidemiologist, Center for Disease Control

Thursday October 9, 2008 at 4 p.m. in 1170 TMCB

B.S. Mathematics, BYU, 1993

M.S. Quantitative Ecology and Resource Management, University of Washington, 1996

Ph.D. Epidemiology, Emory University, 2000



Actuarial Science

David Andrist

Actuary, The Hartford Insurance Company

Thursday October 23, 2008 at 4 p.m. in 1170 TMCB

B.S. Mathematics, BYU, 2003

National Security

Nephi Noble

National Security Agency

Thursday December 4, 2008 at 4 p.m. in 1170 TMCB

B.A. Mathematics Education, BYU, 1995

M.A. Mathematics, BYU, 1997

Ph.D. Mathematics, BYU, 2002



College Publications

Chemistry & Biochemistry

C. Vives-Bauza, M. Anand, A.K. Shirazi, J. Magrane, J. Gao, H.R. Vollmer-Snarr, G. Manfredi, and S.C. Finnemann, "The Age Lipid A2E and Mitochondrial Dysfunction Synergistically Impair Phagocytosis by Retinal Pigment Epithelial Cells," *J Biol Chem*, **283**, 24770-248780 (2008).

Z.A. Dreger, J.E. Patterson, and Y.M. Gupta, "Static and Shock Compression of RDX Single Crystals: Raman Spectroscopy," *Journal of Physics: Conference Series*, **121**, 042012 (2008).

G. Saini, K. Sautter, F.E. Hild, J. Pauley, and M.R. Linford, "Two-silane Chemical Vapor Deposition Treatment of Polymer (nylon) and Oxide Surfaces that Yields Hydrophobic (and superhydrophobic), Abrasion-resistant Thin Films," *Journal of Vacuum Science and Technology*, **26(5)**, 1224-1234 (2008).

G. Saini, L. Yang, M.L. Lee, A. Dadson, M.A. Vail, and M.R. Linford, "Amino-Modified Diamond as a Durable Stationary Phase for Solid-Phase Extraction," *Analytical Chemistry*, **80**, 6253-6259 (2008).

Computer Science

Geological Sciences

Mathematics

Humphries, Stephen P., Johnson, Kenneth W. "Fusions of Character tables and Shurrings of Abelian Groups," *Communications in Algebra*, Vol.36 p.1437-1460, 2008

Weigu Li, Kening Lu, "A Siegel Theorem for Dynamical Systems Under Random Perturbations," *Discrete and Continuous Dynamical System Series B*, 9, No. 3&4 p.635-642, 2008

Weigu Li, Kening Lu, "Rotation Numbers for Random Dynamical Systems on the Circle," *Transactions of the American Mathematical Society*, 360, No.10 p.5509-5528

Mathematics Education

Gerson, H. (2008) David's understanding of functions and periodicity. *School Science and Mathematics*, 108 (1), 28-38.

Physics and Astronomy

Statistics

Lingwall JW, Christensen WF, and Reese CS, "Dirichlet based Bayesian multivariate receptor modeling," *Environmetrics*, **19**, 618-629, 2008.

Christensen WF, and Schauer JJ., "Impact of species uncertainty perturbation on the solution stability of positive matrix factorization of atmospheric particulate matter data," *Environmental Science & Technology*, **42**, 6015-6021, 2008.