

# Newsletter

College of Physical and Mathematical Sciences

July 2008



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## Distinguished BYU Faculty Member Passes Away

Professor H. Tracy Hall, the father of man-made diamond, passed away July 25, 2008 at the age of 88.

While a student at the University of Utah in 1941, he married his sweetheart Ida-Rose Langford. After completing his B.S. and then an M.S. in chemistry in 1943, he served for two years as a Navy ensign. Returning to the University of Utah in 1946, he became Henry Eyring's first graduate student, completing his PhD in 1948. Two months later he started work at the General Electric Research Laboratory in Schenectady, NY.

While at GE Tracy joined a team focused on synthesizing diamond in the laboratory. On December 16, 1954 Tracy had the privilege of becoming the first person to produce diamond from carbon using a verifiable and reproducible process.

Of the experience Dr. Hall later recalled "My eyes caught the flashing light from dozens of tiny crystals. My hands began to tremble; my heart beat rapidly; my knees weakened and no longer gave support—I knew that diamonds had finally been made by man."

In 1955 Dr. Hall became Director of Research at Brigham Young University. To continue his research, he invented the tetrahedral and cubic press. At BYU Tracy became a popular chemistry teacher and mentor of many graduate students, while continuing his research in high pressure chemistry and further development of high pressure apparatus. He was a pioneer in his field and had a distinguished career.

In 1966 Tracy partnered with two BYU professors, Bill Pope and Duane Horton, to form Megadiamond, a Diamond company that was eventually sold to Smith International and still operates today. Many diamond-producing companies have emerged world-wide based on Dr. Hall's inventions and a large variety of man-made diamond products are used throughout all of industry.

In his personal life, Tracy was a devoted husband and father of seven children, thirty five grandchildren and fifty three great grandchildren. One of his greatest joys in life was to serve as a Bishop for the LDS church where he counseled youth and adult members, and served others daily. Following his service as a bishop, Tracy and his wife served a Church mission to Zimbabwe and South Africa, and often recalled the joys they felt at serving the local people there. In his retirement years Tracy returned to his farming roots and spent his days working hard growing trees at his farm in Payson, Utah.

During recent years, Tracy suffered the effects of long-term diabetes and advancing age. He was cared for by his wife Ida-Rose until her death in March 2005, and by his youngest daughter Nancy and other devoted caretakers.

Dr. Hall passed away at home early on the morning of July 25, 2008. He is survived by four brothers, seven children, thirty-five grandchildren, and fifty-three great grandchildren.

Funeral arrangements are pending.

## Important Dates & Events in the College

July 2008

University Week  
August 25th-27th, 2008

New Student Orientation  
August 29th, 2008  
WIII BNSN  
2:30pm

United Way Day of Caring  
September 4th, 2008  
LaVell Edwards Stadium  
7:30am– Noon

# Thomas Sederberg

## Awarded John Gregory Memorial Award in Geometric Design

Dr. Tom Sederberg from the BYU Computer Science Department was recently awarded the 2008 John Gregory Memorial Award in Geometric Design. Remarking on the honor, Dr. Sederberg said, “it was an unexpected surprise; a very pleasant surprise.”

The award presentation took place as part of the Geometric Modeling seminar held at Germany’s Dagstuhl Castle in May. The Schloss Dagstuhl - Leibniz Center for Informatics is the world’s premier venue for informatics. The Center was created to bring together interdisciplinary researchers from around the globe. Scientists in a number of fields relating to informatics participate in the world-renowned, invitation-only Dagstuhl Seminars and explore cutting-edge research in computer science. Named after an early pioneer in the field of Geometric Design, the John Gregory Memorial Award, given out only every three, is the highest honor afforded at the Geometric Modeling Seminar and one of the only awards of its kind in the world.



Dr. Sederberg received the award in recognition of significant contributions to the field of computer-aided geometric design, where he has pursued cutting edge research in polynomial and spline algorithms, root finding using Bernstein polynomials, surface-surface intersection, freeform deformations and T-splines, which allow artists and designers to add detail and merge models in previously impossible ways. His research at BYU led him to the creation of [T-Splines, Inc.](#), a company which makes T-splines available to the industry. Dr. Sederberg is recognized worldwide for his research in computer aided geometric design, computer graphics, computational algebra, and algorithmic algebraic geometry. He has published prolifically; 11 of his papers have been accepted by SIGGRAPH, the foremost computer graphics association in the United States. In 2006, he received the ACM-SIGGRAPH Computer Graphics Achievement Award in recognition of his achievements in this field.

Dr. Ron Goldman of Rice University, one of Dr. Sederberg’s mentors during his time at Purdue, introduced Dr. Sederberg at the Dagstuhl Conference. In addition to acknowledging Dr. Sederberg’s accomplishments in the field of computer science, Dr. Goldman remarked, “Tom is one of the nicest people you will ever meet. He is friendly, warmhearted, accessible, calm, and tireless, as well as a devoted husband and father.”

## UNITED WAY – LIVE UNITED

Together, **united**, we can inspire hope and create opportunities for a better tomorrow. That’s what it means to **Live United**. Join the **Live United** movement as part of our **Day of Caring on Thursday, September 4, 2008**.

The United Way Day of Caring will be held on Thursday, September 4<sup>th</sup>, 2008. Volunteers from more than 30 county agency partners will gather at the LaVell Edwards Stadium at 7:30am for a breakfast hosted by BYU. Participants will be given a listing of service opportunities to choose from, and will then be directed to the location of their choice. President Samuelson has approved 4 service hours “with pay” for each full time employee who clears Day of Caring attendance with his/her immediate supervisor and is registered. Several members of our college have participated in this event in past years, and have enjoyed the opportunity to work side-by-side in giving service in the community. For more information or to register your participation in this event, please contact Lynn Patten at [lynn\\_patten@byu.edu](mailto:lynn_patten@byu.edu) or by calling 422-4022.

# University Week

The 2008 Annual University Week will be taking place Monday August 25th through Friday August 29th.

“In Thy Light Shall We See Light”

-Psalm 36:9

## **Monday, August 25th**

8:00 a.m.-9:00 a.m.	President's Reception & Breakfast for New Faculty (By Invitation Only, Ticketed Event)	Skyroom Restaurant WSC
11:00 a.m.– 12:20 p.m.	ORCA Workshop (Deans and Dept. Chairs)	251 TNRB Associate Academic Vice President
12:30 p.m.– 2:00 p.m.	Graduate Studies Workshop (Graduate Coordinators, Associate Deans, Dept Chairs)	251 TNRB Associate Academic Vice President
1:00 p.m.– 4:30 p.m.	New University Personnel Orientation (Pre-Registration Required at ext. 2-6868)	3228 WSC Human Resource Services
2:15 p.m.– 3:45 p.m.	Deans and Department Chairs Session	Assembly Hall HC Academic Vice President

## **Tuesday, August 26th**

8:00 a.m.– 9:30 a.m.	AUC Breakfast for all university personnel, full & Part-time faculty, retirees, surviving spouses, and partners	Brigham Square (WSC)
10:00 am.– 11:30 a.m.	Joint meeting for all university personnel, retirees, and partners	Marriott Center President Cecil O. Samuelson
11:30 a.m.– Noon	Awards Recipients' Reception	Marriot Center President Cecil O. Samuelson
1:30 p.m.– 3:00 p.m.	General Faculty Sessions	de Jong Concert Hall, HFAC Academic Vice President
4:00 p.m.– 5:00 p.m.	Meeting for Religious Education (CES Faculty)	103– 107 JSB Dean, Religious Education

## **Wednesday, August 27th**

10 a.m.– Noon	College Meetings (All college personnel, full-time faculty, staff, & Admin)	W-111 BNSN
Noon– 1:00 p.m.	College Luncheon	W-170 BNSN
1:00 p.m.– 3:00 p.m.	College Grant-Writing Workshop (All interested college faculty)	W-111 BNSN
3:00 p.m.	Chemistry Department Meeting (Contact Dept. for more Info.)	W-140 BNSN
3:00 p.m.	Mathematics Education Department Meeting (Contact Dept. for info.)	197 TMCB
3:30 p.m.	Physics and Astronomy Department Meeting (Contact Dept. for info.)	To Be Decided

## **Thursday, August 28th**

Noon	3K Fun Walk sponsored by Wellness Center (Sign-in begins at 11:45 a.m.)	Backyard HC
8:00 a.m.– 5:00 pm	Statistics Department Meeting (Contact Dept. for more Info.)	Provo Marriott Hotel
8:00 a.m.– 5:00 p.m.	Computer Science Department Meeting (Contact Dept. for more Info.)	Spring Haven Retreat
1:00 p.m.– 5:00 p.m.	Geological Sciences Department Meeting (Contact Dept. for more Info.)	4116 JFSB

## **Friday, August 29th**

8:15 a.m.– 8:30 a.m.	T.A. Training Conference Sign Ins	Pendulum Court, ESC
8:30 a.m.– 4:00 p.m.	T.A. Training Conference (All new department T.A.s)	ESC

# College Publications

## Chemistry & Biochemistry

D J Henderson and I Nezbeda, "William R. Smith: Friend, Engineer, Scientist, Mathematician, and University Administrator," *Collection of Czechoslovak Chemical Communications*, **73**, i-vii (2008).

D J Henderson and L B Bhuiyan, "Contact Value Formulae for the Density Profile of the Electrical Double Layer," *Collection of Czechoslovak Chemical Communications*, **73**, 558-574 (2008).

M Alawneh and D J Henderson, "Molecular Dynamics Results for the Radial Distribution Functions of Highly Asymmetric Hard Sphere Mixtures," *Molecular Physics*, **106**, 106, 607-614 (2008).

A C Steven and D M Belnap, "Cryo-Electron Microscopy in the Era of Structural Proteomics," Chapter 12 in *Structural Proteomics and its Impact on the Life Sciences*, 269-306 (2008).

P B Savage, J Nielsen, X Lai, Y Feng, Y Li, G Nelson, M R Linford, and C Genberg, "Antibacterial Activities of Thin Films Containing Ceragenins", Chapter 5 in *Microbial Surfaces: Structure, Interactions, and Reactivity*, ACS Symposium Series **984**, (2008).

## Computer Science

## Geological Sciences

## Mathematics

Li Xian-jin, 2008. On exceptional eigenvalues of the Laplacian for  $G_0(N)$ , *Proceedings of the American Mathematical Society*, Vol. **136**, No. **6**, P. 1945-1953.

## Mathematics Education

## Physics and Astronomy

Taylor, B. J., "The Last Measurements Made with the Wampler Scanner.II. Tests of Temperature Determinations from Flux Data for FGK IV-V Stars," *Publications of the Astronomical Society of the Pacific*, Volume **120**, Issue **868**, pp. 602-616 (2008).

K. L. Gee, V. W. Sparrow, M. M. James, J. M. Downing, C. M. Hobbs, T. B. Gabrielson, and A. A. Atchley, "The role of nonlinear effects in the propagation of noise from high-power jet aircraft," *Journal of the Acoustical Society of America* **123**, 4082-4093 (2008).

Hayamizu, Y., Yamada, T., Mizuno, K., Davis, R.C., Rutaba, D.N., Yumura, M., Hata., (2008). "Integrated three-dimensional microelectromechanical devices from processable carbon nanotube wafers", *Nature Nanotechnology* **3**(5) 289-294

Blake RB, Pei L, Yang L, Lee MV , Conley HJ , Davis RC, Shirahata N , Linford MR (2008). "One-step growth of ca. 2-15 nm polymer thin films on hydrogen-terminated silicon," *MACROMOLECULAR RAPID*, Vol **29**, P638-644

Maran U, Conley H , Frank M , Arif AM , Orendt AM , Britt D , Hlady V, Davis R, Stang PJ (2008). "Giant micelles of organoplatinum (II) gemini amphiphiles," *LANGMUIR* Vol. **24**, P.5400-5410

Resonance Raman measurements of carotenoids using light-emitting diodes Scott D. Bergeson, Justin B. Peatross, N. Jay Eyring, John F.

Fralick, Douglas N. Stevenson, and Scott B. Ferguson, J. Biomed. Opt. **13**, 0444026 (2008), DOI:10.1117/1.2952075

## Statistics