ENDOWMENT HONOR ROLL 2013

> $1000
Michael L. Allen Dr. Alice L. Bean Dr. Gisela M. Dreschhoff
LCDR Laurence A. Eichel & Kathleen L. Hardesty Dr. Gene R. Feaster
Paul M. Ferguson Mary L. Hanson & James R. Hanson Honeywell Aerospace
COL Brenda S. Johnson & LTC Lindley N. Johnson Jack W. Lowry & Catherine G. Lowry
Dr. Ramona Kessel & Robert A. Kessel Colleen M. McKee & James G. McKee
Bruce H. McKeithan & Freda McKeithan Dr. James A. Pintar
Dr. Michael C. Rasmussen & Janet Renko Rasmussen Justin J. Rennilson
Dr. Stephen J. Sanders Dr. Barbara Anthony-Twarog & Dr. Bruce Twarog

> $500
Dr. Robert C. Bearse & Margaret M. Bearse Dr. Donald A. Close
Dr. Timothy A. Duman, & Michelle Leonard Duman John V. Martonchik
Dr. Christine A. Fidler & Dr. Joseph C. Shields Linda Dae McKay & Douglas W. McKay
Dr. Donald G. Shirk & Dr. Melanie V. Shirk Raymond J. Shu Patrick L. Sterner

> $250
Dr. Chi Kin Lam Dr. Donald J. Perkey & M. Nadine Perkey
Dt. Warren K. Legler Dr. Ina Piket Robertson & Steven M. Robertson

> $100
Dr. Steven L. Ball Dr. Rebecca C. Chaky Dr. Charles Lee Francis Jr.
Dr. Dean W. Halderson & Cynthia Williams Halderson Dr. Jack G. Hills
Dr. Gerald E. Holmberg & Margaret Cooper Holmberg Dr. Richard F. Hubbard
Dr. Delbert M. Jones Richard G. Leamon & Yvonne M. Lazear
Dr. Vaughn C. Nelson & Elizabeth Nelson Dr. Tamara E. Payne
Jane Dion Preston & Dr. Daryl W. Preston M. Diane Querry
Kristin Commer Simunac Dr. Ronald L. Snell David A. VanPelt

< $100
Dr. Kenneth C. Baile James S. Carson & Jean S. Carson Thomas J. Chester
Larry J. Devlin Gary E. Hanson & Kay Blauer Hanson George M. Henry
Karla E. Kuebler Dr. Charles A. Lundquist Dr. Kurt R. Moore
Allison York Pierron & Daniel C. Pierron Dr. David R. Renneke
David W. Schudel Allen G. Taylor & Selma A. Taylor
Raleigh K. Wilson & Roberta Jones Wilson Dr. Jeff A. Winger

DEGREE RECIPIENTS: 2013 - 2014

Engineering Physics (BS)
Griffin Adams Caleb Christianson Han Zhongyi Dustin Kerby
Jake Meeth Phuc Nguyen Alexander Polsley Ben Weintraub

Physics (BS)
Johnathan Croxell Abhinav Kumar Katrina Martin Greg Pach
Brian Schafer Benjamin Vail Amie Vo Ben Weintraub Jill Wenderott

Physics (BA)
Yasen Ivanov Daniel Webb Astronomy (BA)
Astronomy (BS)
Abhinav Kumar Brian Schafer Minors

Physics (MS)
Chris Gerstenkorn Yonatan (Jonny) Israeli Sarah LeGresley
Eddie (James) Orcutt Matt Russell
Renewable energy research, education project receives NSF grant

Congratulations to Asst. Prof. Wai-Lun Chan, who has been awarded a prestigious Faculty Early Career Development (CAREER) Award by the NSF for his research proposal, “Understanding the Role of Quantum Coherence in Exciton Transport and Separation in Molecular Aggregates.” The award is the highest honor given by the NSF to young researchers. His research explores fundamental materials issues related to organic semiconductors. It addresses the challenge of finding low-cost renewable energy by exploring the mechanisms that could improve the efficiency of next generation solar cells. The full press release can be accessed at this link.

CMS Group - Featured Research and a Distinguished Appointment

Congratulations to the CMS collaboration for an exciting two weeks. A research paper with lead authors Dr. Phil Baringer, grad student Danny Noonan, and Postdoc Dr. Gabriele Benelli on measurements of the top quark was featured in the CERN Courier for Feb. 24. Meanwhile, Prof. Alice Bean has been selected as a Jefferson Science Fellow for 2014. The prestigious JSF program is administered by the National Academies and supported through a partnership between the U.S. academic community, professional scientific societies, the U.S. Department of State and the U.S. Agency for International Development (USAID). Jefferson Science Fellows spend one year on assignment at the U.S. Department of State or USAID as science advisors on foreign policy issues. More on the program can be found at this link.

Research will gauge hypothetical disaster: a supernova close to Earth

A research team led by Dr. Adrian Melott of Physics and Astronomy has been awarded $500,000 by NASA to make the most painstaking assessment ever of the potential damage from a near-Earth supernova. Melott is working with Dr. Andrew Overholt of MidAmerica Nazarene University and Dr. Brian Thomas of Washburn University — both Physics and Astronomy alumni — to perform computer modeling and data analysis on supercomputers such as the National Science Foundation’s Teragrid. The full press release can be accessed at this link.

Using strong lasers, investigators observe frenzy of electrons in a new material

A research team led by Dr. Hui Zhao of Physics and Astronomy has used high-powered lasers to track the speed and movement of electrons inside an innovative material that is just one atom thick. The work at KU’s Ultrafast Laser Lab could point the way to next-generation transistors and solar panels made of solid, atomically thin materials. The full press release can be accessed at this link.
Four Receive Undergraduate Research Awards

Congratulations to the following undergraduate students (and their advisors) for their selection for Research Awards for Spring 2014. Jill Wenderott (far left), senior-physics (Prof. Hsin-Ying Chiu), Anthony St. Aubin (far right), junior-astronomy and interdisciplinary computing (Prof. Hsin-Ying Chiu), Caleb Christianson (center right), senior-engineering physics (Prof. Judy Wu), David Gier (center left), junior-physics and computer science (Prof. Alice Bean). A complete description of their projects can be found at this link.

University announces NSF Graduate Fellowship Awardees

Congratulations to Jeremy Ims, (BS ASTR, PHSX: 2013) on his selection for an NSF Graduate Fellowship. Jeremy is at KU working toward a PhD in Aerospace Engineering under Z. J. Wang. Congratulations also to Justin Mann, doctoral student in physics under Prof. Greg Rudnick, on receiving honorable mention in the NSF competition. The full press release can be accessed at this link.

University announces October 2013- March 2014 Employees of the Month

Congratulations to Jeff Worth, Electronics technologist for the Department of Physics & Astronomy, who was selected as the KU University Support Staff Employee of the Month for October. Jeff was under consideration to be named the Employee of the Year at the annual recognition ceremony, held on May 7 in the Kansas Union Ballroom. The full press release can be accessed at this link.

In Memoriam: Dr. Mary Davidson 1926 - 2014

The Department was saddened to hear of the passing of Dr. Mary Davidson, widow of Dr. Jack Davidson, long-time faculty member and Department Chair in the 70’s and 80’s. Mary was a well-known figure within the KU and Lawrence community, having served for many years on the faculty of the English department while investing significant time and energy in political and social causes dear to her heart. Detailed obituaries can be found at this link for Dr. Davidson.
Martin Gutzwiller was born on October 12, 1925 in the Swiss city of Basel. He completed a Diploma degree from ETH Zurich where he studied quantum physics under Wolfgang Pauli. He then went to the University of Kansas and completed a PhD under Max Dresden. After graduation, he worked on micro-wave engineering for Brown, Boverie, and Cie, on geophysics for Shell Oil, and eventually for IBM Research in Switzerland, New York City, and York-town Heights, until his retirement in 1993. He also held temporary teaching appointments at Columbia University, ETH Zurich, Paris-Orsay, and Stockholm. He was Vice Chair for the Committee on Mathematical Physics, of the International Union of Pure and Applied Physics, from 1987 to 1993. He joined Yale University as adjunct professor in 1993, retaining the position until his retirement.

Gutzwiller formulated the Gutzwiller Approximation for describing electrons with strong local interactions in terms of the Gutzwiller wave function, composed of a simple many-electron wave function acted on by a correlation operator ("Gutzwiller projection"). He was also the first to investigate the relationship between classical and quantum mechanics in chaotic systems. In that context, he developed the Gutzwiller trace formula, the main result of periodic orbit theory, which gives a recipe for computing spectra from periodic orbits of a system. He is the author of the classic monograph on the subject, *Chaos in Classical and Quantum Mechanics* (1990).

Gutzwiller was also known for finding novel solutions to mathematical problems in field theory, wave propagation, crystal physics, and celestial mechanics. In appreciation of his contributions to theoretical physics, the Max Planck Institute for the Physics of Complex Systems (MPIPKS) annually awards the Martin Gutzwiller Fellowship to acknowledge and promote exceptional research in this field.

The Physics Today obituary for Dr. Gutzwiller can be accessed at [this site](#).