

"All The v's That's Fit
To Print"

ΦYAST ΦLYER

*Homer L. Dodge of Physics and Astronomy
The University of Oklahoma*

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Faculty & Undergrad Awards - PA Library - REU Program Participants - Bob Howard

P&A FACULTY HONORED

As has happened many times in previous years, the Department of Physics & Astronomy was honored this spring with the granting of two prestigious awards to individual faculty members.



Left: Kim Milton, George Lynn Cross Professor ; Right: Matt Johnson, Presidential Professor.

Kim Milton received the George Lynn Cross Professorship for his many contributions to the field of high energy physics. Kim joined the OU faculty in 1986, following five years as an Associate Professor of Physics at Oklahoma State University. Currently, one of Kim's primary research interests is in developing nonperturbative methods for use in quantum field theories and gauge theories. During the 2005-2006 academic year Kim spent a sabbatical leave as the E. T. Jaynes Visiting Professor, Department of Physics Washington University, St. Louis. He also served for many years as the chair of the Graduate Studies Committee. Read more about Kim's research at his website, <http://www.nhn.ou.edu/%7Emilton/>.

Matt Johnson was awarded a Presidential Professorship for his contributions to research and teaching. Matt joined our Department in 1995, after working as a post-doc for the IBM Research Division in Zurich, Switzerland. Matt's current research involves the use of scanning probe microscopy (SPM) techniques to study the growth and the physical and electronic structure of molecular beam epitaxy (MBE) grown nanostructures with atomic resolution. His teaching contributions include overseeing the Department's senior capstone course, in which he coordinates the writing and presentation of individual student research projects at the culmination point of undergraduate study in our Department.

Currently, the Department of Physics & Astronomy has three George Lynn Cross professors (Branch, Milton, Parker), three David Ross Boyd professors (Cowan, Henry, Morrison), and four Presidential professors (Abraham, Johnson, Strauss, Watson).

REU PROGRAM, SUMMER 2007

The summer months provide an opportunity for undergraduates both from OU and across the country to spend a couple of months working individually with a P&A faculty member getting their hands dirty with intense research, often for the first time. The Research Experience for Undergraduates program is sponsored by the NSF and is overseen here at OU by Kieran Mullen and Eric Abraham.

Non-OU students participating this year include:

Joshua Haines Oklahoma City University (OK)
Chris Bruner Worcester Polytechnic (MA)
Richard Worhatch Michigan State University (MI)
Casie Schmitt Simpson College (IA)
Curtis McCully Southern Nazarene University (OK)
Eric Valenti Northwest Nazarene College (ID)

The OU students joining us this summer are:

Jason Garman
Ernie Sanchez
Leah Trafford
Robert McClure
Kelly O'Roke
Michael Meier

Thomas Kennington

The Department extends a warm welcome to these students and hopes that they have a fruitful and rewarding time in Norman.

2007 UNDERGRADUATE AWARDS

The Department's annual Awards Day was held on Thursday, May 3, when numerous students were recognized for their scholastic achievements. The Undergraduate Studies Committee each year is charged with the task of singling out those students who have consistently demonstrated their academic talents in either Physics & Astronomy or Engineering Physics. Below, the winners of each award are listed. The Department congratulates each of these students and at the same time wishes all the graduating seniors the best of luck in the future.

The Fowler Prize for the Outstanding Senior in the Homer L Dodge Department of Physics & Astronomy

Sarah Brienne Lumpkins Engineering Physics

Wesley Robert Ketchum Astrophysics

The Dodge Prize of the Outstanding Junior in the Homer L Dodge Department of Physics & Astronomy

Susan Marie Gosse Professional Physics

The Dodge Prize of the Outstanding Sophomore in the Homer L Dodge Department of Physics & Astronomy

Jonathan Lyn Caddell Engineering Physics

**The Stanley Babb Award for Outstanding Leadership and Service
in the Homer L Dodge Department of Physics & Astronomy**

Devin Randall Harper Professional Physics, Graduating senior

**The Homer L Dodge Department of Physics & Astronomy Award
for Outstanding Scholarship by a Graduating Senior**

Nicholas Ron Hall Astrophysics

Devin Randall Harper Professional Physics

Jerod Thomas Parrent Astrophysics

Derrick Richard Toth Professional Physics

Daniel James Wasielewski Engineering Physics

The Duane E. Roller Award of Outstanding Scholarship in Physics & Astronomy

Joe Dan Mitchell Professional Physics, 3rd year award

Jonathan Conley Sharp Professional Physics, 3rd year award

The William Schriever Award for Outstanding Scholarship in Physics & Astronomy

Jacob D Lambert Professional Physics, 2nd year award

The Duane E. Roller Award of Outstanding Scholarship in Engineering Physics

Christian J Crowe Engineering Physics, 3rd year award

The William Schriever Award for Outstanding Scholarship in Engineering Physics

Brian Joseph Morris Engineering Physics, 2nd year award

Roy B Adams Engineering Physics Scholarship

Christian J Crowe Engineering Physics, 3rd year, Sr

Joshua Kyle Reid Engineering Physics, 2nd year, So

Ernest Serapio Sanchez Engineering Physics, 3rd year, Ju

Engineering physics students awarded J. Clarence Karcher Scholarships

Christopher Edward Allen 3rd year, Sr

Brian Joseph Morris 3rd year, Ju
Andrew Martin Santos 2nd year, Ju
Jared Allen Seay 2nd year, So
Ryan Jameson Smith 4th year, Sr
Alan Thomas Taylor 2nd year, So

Engineering physics students recognized for Meritorious Scholarship

Thomas Martin Adams 2nd year, So
Jonathan Lyn Caddell 2nd year, Sr
Bryce Matthew Callies 1st year, Fr
Alexander James Down Graduating senior
Stephen Phillip Glenn 3rd year, Sr
Hawken Lee Grubbs 2nd year, Ju
Eric Laurence Johnson 4th year, Sr
Thomas Patrick Kennington 2nd year, Ju
Sarah Brianne Lumpkins Graduating senior
Robert Andrew Mc Clure Jr 3rd year, Sr
Jason Luke Mc Cracken 1st year, Fr
Michael David Meier 4th year, Sr
Robert Wesley Nicholas Graduating senior
Kelly Louise O'Roke 3rd year, Sr
Joel Palmer Ramey 4th year, Sr

Mbonda Youmasu Siewe Graduating senior
Joshua David Smart 4th year, Sr
Daniel James Wasielewski Graduating senior
Jeffrey Scott Woidke Graduating senior

Cuba and Ted Webb Scholarship

Alea Dawn Smith Astrophysics, 2nd year, Jr

Homer L Dodge Scholarship

Ethan William Brown Professional Physics, 4th year, Sr

Physics and Astronomy students awarded J. Clarence Karcher Scholarships

Susan Marie Gosse Professional Physics, 3rd year, Sr
Joe Dan Mitchell Professional Physics, 3rd year, Sr
Joshua Scott Smith Professional Physics, 3rd year, Sr
Daniel Robert White Professional Physics, 3rd year, Sr

Physics and Astronomy students recognized for Meritorious Scholarship

Eric David Anderson Physics, 1st year, Jr
Bryan Kyle Archer Professional Physics, 2nd year, Jr

Amanda Gray Baldwin Physics, 1st year, Jr
Brett Lance Barasch Physics, 2nd year, So
Sara Diann Barber Astrophysics, 2nd year, Jr
Henry Len Bradsher Astrophysics, Graduating senior
Cynthia Erin Brown Physics, 3rd year, Sr
Dustin Clark Combs Professional Physics, 3rd year, Sr
Erin Michelle Cooper Astrophysics, Graduating senior
Jason M Evans Astrophysics, 2nd year, Jr
Caitlin Michelle Finley Astrophysics, Graduating senior
Daniel Ross Freno Professional Physics, 4th year, Sr
Jason Bradley Garman Professional Physics, 3rd year, Sr
Nicholas Ron Hall Astrophysics, Graduating senior
Tyler James Hardman Professional Physics, Graduating senior
Devin Randall Harper Professional Physics, Graduating senior
Mary Catherine Hogan Astrophysics, 1st year, Fr
Jim A Hopkins Physics, 2nd year, Jr
Spencer Dana James Astrophysics, 2nd year, So
Justin Gerard Jaskowiak Physics, 1st year, So
David William Kelle Professional Physics, 4th year, Sr
Wesley Robert Ketchum Astrophysics, Graduating senior
Christopher David Krycho Professional Physics, 3rd year, Sr
Jacob D Lambert Professional Physics, 2nd year, Sr
Amar Elias Molinas Professional Physics, 2nd year, Sr

Jerod Thomas Parrent Astrophysics, Graduating senior
Kevin Orion Perot Astrophysics, 2nd year, Jr
Brian Michael Reed Professional Physics, 3rd year, Jr
Christopher Alan Schroeder Professional Physics, 1st year, So
Jonathan Conley Sharp Professional Physics, 3rd year, Sr
Joanne Claire Singleton Physics, 1st year, So
Julie Nicole Skinner Astrophysics, Graduating senior
Derrick Richard Toth Professional Physics, Graduating senior
Leah Elizabeth M Trafford Professional Physics, 2nd year, So
Matthew Robert Whiteway Physics, 1st year, So

EVOLUTION OF THE P&A LIBRARY

When librarian Kathryn Caldwell, a Norman native and former sociology and criminology major who has worked for the OU library system since 1994, took command of matters on the second floor of Nielsen Hall in 1998, the Physics & Astronomy Library, and indeed the entire OU library system, was in a state of rapid change. That change, of course, was being driven by the digital revolution and the pressure to provide users with rapid online access to information.

At that time, the library was physically larger in size, comprising two rooms. The principal area contained the library staff office and desk, bays of books and monographs, and numerous shelves of journals, both the bound ones as well the newly received unbound issues. Many of the bound journals were stored in an adjoining annex, just across the back hallway from the

main room.



Left: Kathryn Caldwell answering a phone query at her desk in the Physics & Astronomy branch library, 2nd floor, Nielsen Hall. Right: Kathryn at work among the racks of current journals.

But a student from the 90s who walked into today's P&A library would notice a number of changes. First, except for the current unbound issues, the journals are gone; they've all been moved over to the main library. And as part of that transition the library lost the annex, now no longer required for journal storage. (The current plan is to turn the old annex into much-needed lab space.) Finally, as in most libraries, the large card catalog has vanished. What remains are the staff area, book bays, racks displaying 172 current journals, and plenty of open space for students to study. These changes are the result of space limitations as well as the increased availability of on-line journals.

The shift to e-journals was simply part of an overall morphing of the library system and the way information is handled. Beginning in 1989, the OU card catalog became digitized, for example. But the shift to online journals didn't start until the mid-90s. Kathryn recalls that *Physical Reviews* led the way, becoming accessible over the web in 1998. But other journals soon followed, with *Monthly Notices of the Royal Astronomical Society* being one of the last to become available electronically.

With faculty and students now able to access journals online from their desks, how has this affected usage and traffic in the P&A library? Interestingly, the number of daily users is roughly the same as before, with an average of 50 individuals walking in each day; typically 20 books are checked out. What has changed, though, is the patron profile. Fewer faculty and graduate students enter the library on a regular basis, but taking their places are many more undergraduates. They come in to study, use the copier, ask questions about references, etc. In the past, undergrads represented less than 50% of the patrons; now that number has jumped up to around 80%.

Finally, security in the P&A library has been scaled up over the years. Students and faculty no longer have unlimited access after hours. Instead, special arrangements are necessary, such that an approved user, for a \$20 fee, gains entry by swiping his/her ID card. Kathryn says there are roughly four people who have forked over the 20 bucks and have overnight privileges, not because PA types can't pass the intense screening, but because the demand is simply not there. Additional security includes a decorative electromagnetic security gate which has been erected just inside the main door, and which conspires with the magnetic tabs now embedded in all books to trip an alarm if anyone dares walk out with an un-desensitized volume.

So, much has changed under Kathryn's nine year watch at the P&A library. But it's still very

much a place where personal attention is paramount. No on-line help or extra-campus outsourcing. Kathryn has seen to that.

ROBERT HOWARD (1913-2007)

Robert Adrian Howard, Professor Emeritus of Physics and Astronomy, died February 11, 2007, just 12 days short of his 94th birthday. Bob was born in Los Angeles February 23, 1913. He was trained in the area of nuclear physics, receiving a master's degree from Cal Tech and a PhD from Washington University in St. Louis. Prior to joining the faculty at OU he worked for Carter Oil and, during WWII at MIT on radar development. He joined the Department of Physics at OU in 1947, retiring in 1976.

During his long tenure at OU, Bob made substantial contributions to all areas of the academic life of the Department. In education, he taught most of the courses the department offered, and was an innovator in the design of new courses as the department rapidly expanded both in size and course offerings. He authored a textbook in nuclear physics that was published in 1963. Administratively, in addition to the usual committees, Bob served as department chair. Before coming to OU, Bob had done research in a variety of areas: x-ray scattering, movement of oil and water through porous rock, microwaves, and hydrodynamics. Upon assuming his position at OU he decided to pursue research in cosmic rays and particle physics. As part of the department's engineering physics program, Bob taught a course in nuclear reactor engineering, and when the department received an AEC grant to enable them to acquire a small teaching reactor Bob assumed responsibility for setting up the reactor and getting it running.

In retirement, Bob Howard pursued his love of the outdoors by acquiring property in Montana

near Yellowstone National Park and building a cabin on it. He spent his retirement summers in Montana with his second wife Phyllis and winters in Norman.

-contributed by Bob Petry

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