

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

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

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RYAN DOEZEMA STEPS DOWN AFTER 19 YEARS AS CHAIR OF PHYSICS & ASTRONOMY



**Ryan Doezema
contemplating an exit
strategy.**

This summer marks the end of a long and eventful chairmanship in the Homer L. Dodge Department of Physics & Astronomy as Professor Ryan Doezema steps down after 19 years at the helm. Since assuming the chairmanship in 1990, Doezema has hired and mentored over half of the current faculty, while the number of women on the faculty has doubled. He leaves each of the Department's four research groups, Condensed Matter and Solid Physics, Atomic and Molecular Physics, Astronomy and Astrophysics, and High Energy Physics, as strong, collegial entities with impressive publication and external funding rates. Doezema has also overseen the three-phase renovation project of Nielsen Hall, which has

resulted in a superb teaching facility with two new state-of-the-art lecture halls and several smaller classrooms and labs, as well as the expansion and improvement of faculty office space. In addition, it was on Doezema's watch that the family of another former and long-term chair, Dr. Homer L. Dodge, donated a large sum of

money to assist with the renovations, set up the Dodge Prize for undergraduates, the Dodge Fellowship for graduate students, and endow three new chairs to attract top internationally recognized scholars to the Department. While maintaining his own vigorous research program as well as contributing to the Department's teaching effort as one of its most effective members, Doezema has selflessly promoted the faculty's achievements outside of the Department. During his tenure the Physics & Astronomy faculty has collectively been awarded two George Lynn Cross professorships, two David Ross Boyd professorships, twelve Presidential Professorships, two Kinney-Sugg professorships, and numerous other awards for teaching and research. Doezema is also highly respected and regarded throughout the University by both the faculty and administration. In his spare time Doezema maintains a sailboat on Lake Thunderbird and is an enthusiastic sailor both there and around the Puget Sound region each summer. In addition, he enjoys tinkering on old cars and attending opera performances. Doezema's impact on the Department is immeasurable, and he leaves his post knowing that the faculty which he has guided and represented over the past 19 years is headed for an even brighter future thanks to his leadership and encouragement of each member.

The new chair of the Department is Professor Greg Parker, who was elected to the post last spring. Parker will take over this summer as Doezeema resumes a normal teaching/research position in the fall. We wish both the outgoing and incoming Chairs the best of luck in their new roles!



**Greg Parker
preparing to take
charge**

DEPARTMENT GARNERS FIVE FACULTY AWARDS

It's almost becoming a habit. Each April at the annual faculty awards ceremony the Department seems to take home at least a couple of awards for either research, teaching, or both. This year we pushed the limits, as five of our faculty were honored with prizes during the event. First, Kieran Mullen was made a Presidential Professor, the twelfth such award given to a P&A member since OU began giving them out in 1996. That's right, roughly one per year and over one third of the faculty! Next, Mike Santos received the Regents' Award for Superior Research and Creative Activity. Mike has also been a Presidential Professor in the past. Stu Ryan was honored with the OU Foundation for Excellence in Teaching Award, Brad Abbott received a Regents' Award for Superior Teaching, and John Cowan received a General Education Teaching Award. Congratulations to each of these faculty members. You make it seem so easy!



Left to right: Kieran Mullen, Mike Santos, Stu Ryan, Brad Abbott, and John Cowan

GRADUATE STUDENT NEWS

The Nielsen Prize is presented in the spring to graduates who have recently defended their PhD dissertations and whose work the faculty determines ranks in the upper 10% of all P&A dissertations. The Prize includes a monetary award along with an invitation to return to the Department in the future and present a colloquium. This year two graduates were awarded the Nielsen Prize, K.V. Shajesh and Richard Overstreet. Shajesh's dissertation title was "Casimir Effect: An Avatar of the Quantum Vacuum", and his advisor was Kim Milton. The title of Richard's dissertation was "Experimental Studies of Cs Rydberg Atom Pair Interactions", and his advisor was Jim Shaffer.

Graduate student Jef Wagner was presented with a University award for Outstanding Graduate Research Assistant. Jef was also honored in our Department with the Kalbfleisch Scholarship.

UNDERGRADUATES RECEIVE DESERVED RECOGNITION

On the last Thursday of the regular semester the Department traditionally holds its annual awards ceremony to honor those undergraduate students who have demonstrated outstanding scholarship. The following table provides the names and awards.

Awards Day May 7, 2009

Last Name First Name

Homer L. Dodge -Departmental Awards

Fowler Prize (Graduating Senior)	Mitchell	Joe Dan
Dodge Prize - Junior Year	Schroeder	Christopher Alan
Dodge Prize - Sophomore Year	Free	Robert Douglas

Physics & Astronomy Awards

J Clarence Karcher Award	Baldwin	Amanda Gray
Duane E. Roller Award	Whiteway	Matthew Robert
William Schreiber Award	Goran	Andre Markus
Outstanding Scholarship by A Graduating Senior	Krycho	Christopher David

Physics & Astronomy Scholarships

Cuba & Ted Webb Scholarship	Trafford	Leah Elizabeth
J Clarence Karcher Scholarship	Getts	Mallory Dawn

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J Clarence Karcher Scholarship
J Clarence Karcher Scholarship

Maingi
Schroeder
Whiteway

Logan Suneil
Christopher Alan
Matthew Robert

Physics & Astronomy Recognition

Meritorious Scholarship
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Baldwin
Barber
Bhagat
Savell
Clouse
Costello
Doull
Erdman
Fallon
Freno
Goran
Gough
Hogan
Holden
Hopkins
James
Kane
Krycho
Lambert
Mitchell
Perot
Seaberg
Sharp
Solow
Stinnett
Truitt

Amanda Gray
Sara Diann
Anita
Cynthia Erin
Dustin P
Whitney Nicole
Brandon Arthur
Darren Wade
Adam James
Daniel Ross
Andre Markus
Chase William
Mary Catherine
Brad Miles
Jim A
Spencer Dana
Stephen Joseph
Christopher David
Virginia Lee
Joe Dan
Kevin Orion
Preston Hamilton
Jonathan Conley
Daniel William
Jacob
Amanda Rosendall

Engineering Physics Awards

J. Clarence Karcher Award
Duane E. Roller Award
William Schreiber Award
William Schreiber Award
William Schreiber Award
Outstanding Scholarship by A Graduating Senior

Crowe
Santos
Dunn
Gentry
Mueller
Caddell

Christian J
Andrew Martin
Zachary Thomas
Cale Michael
John Philip
Jonathan Lyn

Engineering Physics Scholarship

Roy B. Adams Scholarship
Roy B. Adams Scholarship

Callies
Morris

Bryce Matthew
Brian Joseph

J. Clarence Scholarship
J. Clarence Scholarship
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Bringhurst	Jody Kyle
Doiron	Curtis Francis
Dunn	Zachary Thomas
Free	Robert Douglas
Gentry	Cale Michael
	Joshua Reese Sing
Hardisty	Yun
Lowe	Scott Douglas
Reid	Joshua Kyle
Santos	Andrew Martin
Welch	Richard James

Engineering Physics Recognition

Meritorious Scholarship
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Abner	Benjamin Nichols
Bacon Jr	Bruce Bennett
Browder	Aaron Edward
Caddell	Jonathan Lyn
Crowe	Christian J
Mueller	John Philip
Patino	Ricardo Hiroshi
Piersall	Cody Wade
Sanchez	Ernest Serapio
Schlupp	Nils
Seay	Jared Allen
Tower	Peter William
Watts	Brendon Tyler
Willard	Aaron Jason

RECENT DEFENSES

Four students have recently defended their PhD dissertations and have moved on to work as postdocs.

K.V. Shajesh defended his dissertation in July, 2008. A student of Kim Milton's, Shajesh's thesis was titled "Casimir Effect: An Avatar of the Quantum Vacuum." He is now teaching high school physics at St. Edwards High School in Vero Beach, FL, also known as the winter training camp for the L.A. Dodgers.

Richard Overstreet defended his thesis, "Experimental Studies of Cs Rydberg Atom Pair Interactions", this spring and is now a postdoc at the University of Virginia working with Tom Gallagher. Richard's advisor was Jim Shaffer.

Aruna Ruwan Dedigama defended his thesis, “Spin-Orbit Coupling in InSb Heterostructures”, in June. His advisor was Sheena Murphy. Ruwan is continuing on as a postdoc working with Sheena’s group.

Madhavi Edirisooriya defended her dissertation, “InSb Quantum Well Structures for Electronic Device Applications”, and is now a postdoc at Duke University in the Department of Electrical and Computer Engineering. Madhavi worked with Mike Santos.

Congratulations and good luck to each of these students!

REU STUDENTS ARRIVE FOR SUMMER WORK

The Research Experience for Undergraduates is off to a great beginning this summer. Program chief Kieran Mullen reports that our summer class this year includes the largest number of students from outside of OU ever, and that the acceptance rate for applicants offered positions was unusually high at over 80% for this summer. Below are the names of the students and their mentoring faculty members. Welcome to each of these students, and here’s to a productive summer!

External Students

Adamek, Evan
Bramlett, Rebecca
Jackson, Rebecca
Henning, Tina
Orwig, Jessica
Abrahams, Ryan
Coats, Zachary
Canton, Paul
Lueck, Collin

Mentoring Faculty

TPP: Chung Kao
AP: Eddie Baron
EAM: Shafer-Ray
TAM: Greg Parker
AP: Eddie Baron
ECM: Lloyd Bumm
EAM: Eric Abraham
EPP: Brad Abbott
TAM: Greg Parker

OU Students

Lowe, Scott
Doiron, Curtis
Mueller, John
Truitt, Amanda

Seay, Jared
Stinnet, Jacob
Clouse, Dusting

ECM: Mike Santos
EPP: Brad Abbott
ECM: Lloyd Bumm
AP: Karen Leighly
ECM: Matt
Johnson/Yang
EAM: Shafer-Ray
AP: Eddie Baron

TAs

Dang, Chau
Sanchez, Ernie

TA for grant
TA for grant

DEPARTMENT HOSTS INTERNATIONAL WORKSHOP

The Homer L. Dodge Department of Physics hosted the Third International Workshop on the Interconnection Between Particle Physics and Cosmology (PPC09) during the week of May 18-22, 2009. Professors Howard Baer and Chung Kao served as co-chairs, and received welcome assistance from Yun Wang and Kaladi Babu (OSU), and also Heaya Summy, Andrew Box, Josh Sayre, Shibi Rajagopalan, Andre Lessa, Jeff Wagner and Adrienne Gautier. We received financial assistance from the US DOE, NSF, Oklahoma Epscor, the H. L. Dodge Department of Physics and OU Dean of Arts and Sciences Paul Bell.

The meeting was attended by about 110 physicists from all over the world. We had four and one-half days of plenary talks in 170 Nielsen Hall, and an evening session of three sets of shorter parallel talks by students and post-docs. Professor Michael Dine was our distinguished public speaker. He pioneered numerous important topics in particle physics and cosmology, and gave an inspiring and informative lecture.

Some of the hot topics in the plenary sessions included: status of the Pamela and ATIC anomalies, measurements of dark energy, results from and prospects for dark matter searches, results from the Fermilab Tevatron, and prospects for the CERN LHC collider, which is scheduled for a fall, 2009 turn-on. A Thursday evening banquet was held at the Sam Noble museum, and the attendees really enjoyed the exhibits. Also, a tour of rare History of Science volumes at the Bizzel Library was arranged, which impressed our attendees greatly. Reports back from various participants were that people were very impressed with the beauty of our campus, the quality of the Department of Physics & Astronomy, and the excellent talks which were presented by our speakers.

by Howie Baer and Chung Kao

INTERNATIONAL YEAR OF ASTRONOMY 2009

This year marks the 400th anniversary of Galileo's first use of the telescope for astronomical purposes. The event is being celebrated world-wide by over 100 countries, with support from the United Nations and other widely recognized organizations. Our Department, along with the Norman Public Schools, Sam Noble Museum of Natural History, Astronomics Inc, and numerous area astronomy clubs and observatories is helping to host twelve monthly public lectures. Each event is held in the Museum's auditorium. The lecture subjects range from presentations on black holes, galaxies, and dark energy, to light pollution, space suits and life on Mars. Astronomics Incorporated, a local mail order purveyor of

astronomical telescopes and related supplies, donates a pair of binoculars or a telescope each month to be given away during a drawing prior to each lecture. Then, after each event, attendees have the opportunity to use telescopes provided by local amateurs to view the sky from the Museum's parking lot. All six events thus far have been very well attended, with standing room only crowds for all lectures. In addition, the chance to use a telescope and talk about astronomy with knowledgeable amateurs has kept a large portion of the audience hanging around for an hour or so after the talk. Perhaps the most gratifying portion of each program is the Q&A session that follows each talk. Typically, the speaker will get questions from audience members over a broad age range; some really great questions have come from folks of middle school age. In every instance the audience has continued hammering away at the speaker for 20-30 minutes and the event has had to be cut off by the moderator. (Where are these people when it comes time to sign up for our introductory physics and astronomy classes?) With six programs behind us, we are now looking forward to the second half of the IYA09 events. The website for our IYA09 program is <http://www.nhn.ou.edu/iya09>.

ALUMNI NEWS

From Capt. Steven Warren (OU Meteorology 1983): "I noticed your press release [in January] on the International Year Of Astronomy and thought you might be interested in knowing that I am a 1983 OU graduate with a BS in Meteorology. I currently serve as the Superintendent of the U.S. Naval Observatory in Washington, DC. Although my primary expertise is in Meteorology and Oceanography (MS in Meteorology/Oceanography from the Naval Postgraduate School), the Navy assigns the Observatory Superintendent position from the Meteorology/Oceanography Officer Community in the Navy.

"Here at the U.S. Naval Observatory, we are also working a schedule of events to participate in the International Year Of Astronomy. Just thought I would offer this in the 'for whatever it's worth' category and to let you know that we OU grads do occasionally try to keep track of what is happening back home.

"The Superintendent provides operational, scientific and administrative oversight for the U.S. Naval Observatory (USNO). The Naval Observatory has four operational departments: Astrometry, Time Services, Astronomical Applications, and Earth Orientation Departments. We also have two subordinate activities: U.S. Naval Observatory Flagstaff, AZ (the Navy's only dark sky observing facility) and an Alternate Master Clock Facility in Colorado. Along with our operational and research related astronomical activities, we provide the Master Time for all Department of Defense applications (Universal Coordinated Time (USNO)) and serve as a standard of time for the entire United States. More information on our activities can be found at <http://www.usno.navy.mil/usno>

"Of general interest in case you are unfamiliar with the Naval Observatory, we share our grounds with the Vice President of the U.S. The Vice President's residence was originally built as the Naval Observatory Superintendent's residence in the late 1800's.

"I have been Superintendent of the U.S. Naval Observatory since Oct '07. I regret I will be due to rotate out of the position in June of this year. It will be tough to leave such an interesting and unique position. Upon departure, I expect to move to a new position related to staffing of environmental satellite program issues in Silver Spring, MD.

“On a separate note, I had the opportunity to meet an OU astronomy/physics grad student at the recent AAS Conference in Long Beach (I believe Leeann Dang) during her poster presentation (nice work).”

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