

Physics & Astronomy

Letter from the DEO

Special points of interest:

- World Year of Physics 2005
- Faculty Directory
- New Faculty
- Van Allen Day 2004
- Students Receiving Degrees
- Contribution Form
- Alumni Update Form

We've just completed another incredibly successful year, with highlights ranging from the announcement of major new externally funded research projects in the space sciences to the development of new outreach activities associated with the World Year of Physics 2005. The past year marked the 90th birthday of Professor James Van Allen, and I was delighted that so many of you could attend the Van Allen Day Celebration. This was also a year in which our alumnus, Dr. James Glanz of the New York Times, was honored by the College of Liberal Arts and Sciences as an Alumni Fellow. Jim is the department's fourth CLAS Alumni Fellow. Last year was yet another year of change in the department as assistant professor

Ben Chandran was recruited away from us by the University of New Hampshire. On the other hand, we are pleased to welcome the newest addition to our condensed-matter and nanoscience faculty, assistant professor Craig Pryor, a leading expert in the theory of electronic structure of semiconductor quantum dots.

I am especially pleased to report to you the establishment of a new departmental scholarship for undergraduates. Beginning in the fall of 2006, each year we will be awarding a nonrenewable \$1,000 merit-based scholarship to an incoming first-year student. The scholarship was made possible by a generous donation from Professor Robert Mutel. Over the coming years, we hope to both broaden the availability of the

scholarship and, perhaps, make the scholarship renewable for up to four years. If you are interested in helping us achieve these goals, you can make a donation specifically earmarked for the scholarship fund using the enclosed contribution form.

If you haven't already done so, send us an update on your life since leaving the department. You can do this by simply going to our Alumni web page at www.physics.uiowa.edu/alumni/ and completing the "Alumni Update Form." Also, if you're ever in the Iowa City area, please don't hesitate to stop by. We'd love to show you some of the exciting new developments in the department.

— Tom Boggess

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World Year of Physics 2005

The World Year of Physics 2005 (WYP 2005) is the international year-long celebration of the 100th year anniversary of the publishing of Einstein's famous papers that ushered in the era of Modern Physics as we know it. The department is proud to participate in this worldwide event by offering again this year the Family Adventures in Science series, the newly developed

Hawk-Eyes in Science program, as well as the Distinguished Public Lecture Series. These programs will present physics to the general public through hands-on demonstrations, public lectures and other activities in the community.

Information, links, and pictures for these WYP 2005 programs and upcoming events can be found on the web at <http://faraday.physics.uiowa.edu/hes/index.htm>.

Also be sure to visit the department's home page often to see what other events are scheduled throughout the year.



Faculty Directory

Astronomy/Astrophysics

Kenneth Gayley,
Associate Professor
Philip Kaaret,
Associate Professor
Cornelia Lang,
Assistant Professor
Robert Mutel, Professor
Steven Spangler, Professor
John Neff, Professor Emeritus

Atomic & Molecular Physics

Experimental
Paul Kleiber, Professor

Condensed Matter/Materials Physics

Theoretical
Michael Flatté, Professor
Craig Pryor, Assistant Professor
John Schweitzer, Professor
Experimental
Thomas Boggess, Professor
John Prineas,
Assistant Professor
Arthur Smirl, Professor
Markus Wohlgenannt,
Assistant Professor

Elementary Particle Physics

Theoretical
Yannick Meurice, Professor
Mary Hall Reno, Professor
Vincent Rodgers, Professor
Experimental
Usha Mallik, Professor
Charles Newsom,
Associate Professor
Yasar Onel, Professor
Edward McCliment,
Professor Emeritus

Nuclear Physics

Theoretical
William Klink, Professor
Gerald Payne, Professor
Wayne Polyzou, Professor
Experimental
Edwin Norbeck,
Professor Emeritus

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Faculty Highlights/Research

Thomas Boggess and **Michael Flatté** organized the University of Iowa Workshop on Materials and Devices Incorporating Multifunctional Interfaces, which was held April 10-14, 2005 in Palm Springs, California. This workshop brought together twenty-five scientists at the cutting edge of research on atomically-sharp interfaces between dissimilar materials. New generations of electronic and optical devices will be based on such interfaces, between ferroelectric materials and semiconductors, magnetic materials and semiconductors, or between different semiconductor materials. The workshop was funded by a grant from the Office of Naval Research.

Benjamin Chandran has left the department and taken a faculty position with the Department of Physics at the University of New Hampshire.

A NATO Advanced Study Institute school on “Manipulating Quantum Coherence in Solid State Systems” was organized in Romania, August 29 - September 8, 2005 by Prof. **Michael Flatté** and adjunct assistant professor **Ionel Tifrea**. This school brought together ten prominent lecturers and 65 students from several NATO countries for instruction on the state of the art of quantum computation and quantum coherence manipulation. The school was funded predominantly by a large grant from NATO and a proceedings volume will appear next year.

Michael Flatté was promoted to the position of Professor.

This past year **Kenneth Gayley** and his wife Jane adopted two children from Kazakhstan. Peter and Anna were born May 2004 and both are doing fine.

The radar sounder onboard the Mars Express spacecraft, which is orbiting Mars, is now operating and carrying out regular science operations at Mars. The instrument is designed to search for subsurface water at Mars and to study the Martian ionosphere. Initial analysis of the data indicates the instrument is functioning very well, and is the first radar sounder to be deployed at a planet other than Earth. A major fraction of the radar sounder was designed and constructed at the University of Iowa, and Professor **Donald Gurnett**'s group expects to collect and analyze data through 2006, as well as through an extended mission currently being considered by the European Space Agency and NASA.



Philip Kaaret

Philip Kaaret, working with colleagues from the Massachusetts Institute of Technology, discovered a new X-ray millisecond pulsar. This is only the seventh such object known. The pulsar is a neutron star and is orbited by a brown dwarf star. X-rays are produced by the pulsar when matter taken from the brown dwarf falls onto the surface of the neutron star. The neutron star has a mass somewhat larger than our Sun, is about 20 km in diameter, and is spinning at a rate of 377.3 revolutions per second. The brown dwarf has a mass between 2% and 7% of the Sun's mass and makes a complete orbit around the neutron star every 83.3 minutes. X-ray millisecond pulsars are exciting to discover because detailed studies of these objects may enable us to precisely measure the mass and radius of the neutron star and thereby constrain the equation of state of ultradense matter.

Philip Kaaret received a University of Iowa Faculty Scholar Award for research involving observations of black holes and measuring intensely bright X-ray sources of other galaxies that may represent a new class of black hole with masses between supermassive and stellar-mass black holes.



Michael Flatté

Faculty Highlights/Research

Faculty member **Craig Kletzing** is part of a team selected for NASA's Magnetospheric Multiscale Mission. This four spacecraft mission will fly the most sophisticated set of coordinated instruments ever assembled to measure the physics associated with magnetospheric reconnection. This is one of the most important processes which couples energy from the Sun into the local space around the Earth resulting in phenomena such as the aurora borealis to "killer electrons" which can damage spacecraft.



Craig Kletzing

The University of Iowa group led by Prof. Kletzing will construct electron optics for the Electron Drift Instrument. The UI effort is currently budgeted at more than \$1.8M for the next five years. The overall MMS effort is led by Dr. James Burch of the Southwest Research Institute in San Antonio, Texas and involves a wide range of instruments provided by multiple institutes from the US and parts of Europe.

Also this past year, Prof. Kletzing received a \$423,000 three-year NASA grant to study the aurora borealis. The project titled, "Correlations of High-frequencies and Auroral Roar Measurements (CHARM)," will launch a sub-orbital sounding rocket the winter of 2007 from the Poker Flat rocket range in Alaska. The data gathered from the rocket launch will explore the role played by Langmuir and upper hybrid waves in the Earth's auroral ionosphere. Prof. Kletzing and colleague, assistant research scientist, Scott Bounds are providing particle detectors, a wave-particle correlator, and Langmuir probes to measure the environment in the ionosphere. The research conducted for CHARM will further the understanding of high-frequency emissions in the Earth's aurora and, more generally, in beam-plasma systems elsewhere in the solar system and beyond.

Craig Kletzing was promoted to the position of Professor.

Karl Lonngren and Sava Savov of the Technical University of Varna, Varna, Bulgaria have published a book entitled "Fundamentals of Electromagnetics with MATLAB." Published by SciTech Publishing, this book is intended for undergraduate students who have been introduced to electromagnetic fundamentals and have used MATLAB in earlier courses. With the extensive use of MATLAB, this text makes electromagnetic theory more understandable for the student and is useful in later courses.

Charles Newsom has joined the CERN Large Hadron Collider (LHC) Compact Muon Solenoid (CMS) Forward Pixel (FPIX) detector project. He is in charge of the hardware design, installation and running of the FPIX detector control system and floor manager of the FPIX testbeam program at Fermilab. The experiment is scheduled for an engineering run in 2007 and a physics run the following year.

To celebrate the World Year of Physics, **Usha Mallik** in collaboration with Christopher Merrill who organized the "Year of Arts and Humanities," organized an event entitled "Strings and Superstrings" at the Clapp Recital Hall on the evening of May 1st. Basics of the physics leading to superstring theory were explained to the general public by Professor Brian Foster, head of the sub-department of particle physics from Oxford University in the UK with the help of Jack Liebeck, a professional violinist. Following this, Jack Liebeck and professional pianist, Inon Barnatan, played pieces from Mozart, Brahms, Bloch and Prokofiev. The event was introduced by President David Skorton with Prof. Mallik as the "master of ceremonies."



Usha Mallik

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Faculty Directory

(continued)

Photonics & Quantum Electronics

Theoretical

Michael Flatté, Professor
Craig Pryor, Assistant Professor

Experimental

Thomas Boggess, Professor
John Prineas,
Assistant Professor
Arthur Smirl, Professor
Markus Wohlgenannt,
Assistant Professor

Plasma Physics

Theoretical

William Daughton,
Assistant Professor
Georg Knorr, Professor Emeritus

Experimental

Nicola D'Angelo, Professor
John Goree, Professor
Robert Merlino, Professor
Frederick Skiff, Professor
Raymon Carpenter,
Professor Emeritus

Space Physics

Theoretical

Jack Scudder, Professor

Experimental

Louis Frank, Professor
Donald Gurnett, Professor
Craig Kletzing, Professor
James Van Allen,
Professor Emeritus

ADJUNCT PROFESSORS

Peter Kortenkamp
Vladimir Nosenko
Kristine Sigsbee
Ionel Tifrea

JOINT FACULTY APPOINTMENTS

David Andersen, Professor
(Electrical & Computer
Engineering)
Richard Hichwa, Professor
(Radiology)
Karl Lonngren, Professor
(Electrical & Computer
Engineering)
Mark Madsen, Professor
(Radiology)

Faculty Highlights/Research (continued)

Prof. Mallik received a one-year grant of \$57,500 from the United States Trust Company of New York, for work with elementary and middle school science teachers in training them to teach science effectively in the classroom.

Prof. Mallik and her Iowa team are responsible for the first observation of the decays of B mesons (constituted of anti-beauty quark and up or down quark) into the charmed neutral baryon Omega_c (consisting of two charm and one strange quark), as part of the BABAR experiment at the Stanford Linear Accelerator Center (SLAC) where the data are collected and her team resides. The result was presented at the 22nd International Symposium on Lepton-Photon Interactions at High Energy in Uppsala, Sweden and is published as hep-ex/0507011. A

publication of this work in a journal is in preparation. Their previous work on the neutral charmed baryon Xi_c (charm, strange, and down quarks) has recently been accepted for publication by *Physical Review Letters*.

Yasar Onel and assistant research scientist Shaowen Wang of the Academic Technologies – Research Services at UI Information Technology Services have received a \$115,000 award from the National Science Foundation (NSF) and the Department of Energy (DOE). Their research will enable scientists to analyze data from the Large Hadron Collider (LHC) located at CERN in Geneva, Switzerland by integrating two of the world's largest computing grids into one grid. The UI campus computer grid (HawkGrid) will also be linked to the LHC. This work is currently part of several national and worldwide grid-based cyberinfrastructure projects. Their research could lead to the creation of a major grid computing center located here at UI.



Group photo of students and faculty who participated in the Student Summer Theoretical Physics Research Session this summer.

alumni of the SSTPRS include Antonio Boveia (now at UCSB), Bjorg Larsen (now at SUNY Stony Brook), Nicholas Romano, Ben Dalgaard, and Stephen Gliske. Prof. Leopoldo Pando Zayas from the University of Michigan also visited as a guest lecturer.

In an April 2005 paper in *Geophysical Research Letters*, **James Van Allen** and research scientist Bruce Randall used their Pioneer 10 data to predict that the direct modulation of galactic cosmic ray intensity by the solar wind will cease at a distance of 106 (\pm 10) AU from the Sun in the antapex direction.

New Faculty

This fall we welcome assistant professor **Craig Pryor** to the department.

Prof. Pryor worked previously as a chief scientist at the Terahertz Device Corp. and as an independent scholar and visiting scientist here at the University of Iowa.

Prof. Pryor's research interests include the theory and modeling of semiconductor nanostructures, computational materials science, and THz devices. He is interested in both the fundamental physics of nanostructures and the application of nanostructures to optical and THz devices, spin-based devices, and quantum information processing. He is also working on the problem of finding accurate, computationally efficient models and algorithms for nanostructures.



Craig Pryor

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Van Allen Day 2004

On a beautiful fall day on the University of Iowa campus, friends, colleagues and former students of Prof. James Van Allen gathered to celebrate his 90th birthday and his many accomplishments on Van Allen Day, October 9, 2004.



Prof. Van Allen addresses the audience in Macbride Hall.

ton presented Prof. Van Allen with an Outstanding Iowan Award from Iowa Governor Tom Vilsack. During a lecture following the award ceremony, Dr. Edward Stone, native Iowan and former director of NASA's Jet Propulsion Laboratory, placed the long history of space physics research that Prof. Van Allen pioneered into the context of the exploration of the outer heliosphere. The



Guest Speaker, Dr. Edward Stone

The celebration began Friday evening with a welcome reception in downtown Iowa City. On Saturday, a day-long celebration of Prof. Van Allen's pioneering exploits and scientific achievements began in Lecture Room 1 of Van Allen Hall. Comments by Tom Boggess, Don Gurnett, and Abigail Van Allen preceded a series of lectures filled with varied accounts by former students and colleagues of their experiences with Prof. Van Allen throughout his many years of teaching and research.

In an afternoon public ceremony hosted by Dean Linda Maxson and the U. of Iowa Alumni Association, President David Skorton presented Prof. Van Allen with an Outstanding Iowan Award from Iowa Governor Tom Vilsack.



Group photo of Van Allen Day participants. (photo courtesy of University of Iowa Photo Service)

occasion concluded with the

audience singing "Happy Birthday" and enjoying Van Allen Day birthday cake.

An evening banquet at the Iowa Memorial Union included a slide show, additional comments by attendees, and a keynote address by former Van Allen student and current Director of the University of Colorado Laboratory for Atmospheric and Space Physics, Dan Baker.

Prof. Van Allen completed the day with some comments of his own, thanking his wife, Abigail, and all of the attendees.

(Photos courtesy of Abigail Foerstner and Arthur Caudy, unless otherwise noted.)



Abigail Van Allen, Prof. James Van Allen and President David Skorton.



Dean Linda Maxson congratulates Prof. James Van Allen.

Outreach

The department enjoyed phenomenal success with its outreach activities this year. Much of this is due to the World Year of Physics 2005 (WYP 2005) initiatives (see World Year of Physics 2005 article on page 1). The Family Adventures in Science program, organized by Prof. Usha Mallik, was very popular last year and will continue in the fall semester. Also the Hawk-Eyes on Science program, coordinated by Dale Stille and Vincent Rodgers, traveled extensively throughout Iowa and nearby states. To support these programs the department has been able to secure grants from the American Association of Physics Teachers Bauder Fund as well as the American Physical Society. This funding has allowed the department to greatly expand both programs, add and make new equipment, do more traveling for outreach, and create brochures and other printed materials. These programs have also been very active in establishing ties to other groups on and off campus.

Hawk-Eyes on Science Program

Recently, the Hawk-Eyes on Science program completed its yearly highlight appearance at the 2005 Iowa State Fair. This year's booth personnel were faculty member Prof. Steven Spangler, staff member Dale Stille, graduate student Leo Rodriguez, and undergraduate students Nichole Kiefer and Nathan

Quarderer. Demonstrations on electricity and magnetism, optics, and astronomy were displayed with many giveaway toys being distributed during our five-hour stint.

The Hawk-Eyes on Science program put on more than thirty demonstrations and outreach functions for area schools and the public. This past year it made stops in Cedar Rapids (McKinley Middle School, Washington High School, Jane Boyd Community Center), Davenport (Scott County Family YMCA), Mount Vernon (Mount Vernon High School), and Des Moines, as well as Chicago, IL and Kirksville, MO to name a few.

Visit the Hawk-Eyes on Science event web site at <http://faraday.physics.uiowa.edu/hes/events.htm> to see where it will be traveling next!

Café Scientifique

Iowa City and the Department of Physics and Astronomy have just established a chapter of the Café Scientifique ([http://](http://www.cafescientifique.org/)

www.cafescientifique.org/). The Café Scientifique is a monthly meeting between a scientist and the people of the community to discuss topics in science. Such topics can range from the early universe, stem cell research, to alternative energy and the environment. There are several chapters in Europe and a few here in the United States. The Cottage Bakery & Cafe (14 S. Linn Street, Iowa City) is where these discussions will take place on the following dates from 5:00 pm to 6:00 pm.

September 8, 2005
October 13, 2005
November 10, 2005
December 8, 2005
February 9, 2006
March 9, 2006
April 13, 2006
March 11, 2006

Prof. Ken Gayley will be the first speaker with discussions on "The Early Universe." Contact Prof. Vincent Rodgers at vincent-rodgers@uiowa.edu if you know of possible speakers or if you need more information.

Distinguished Public Lecture Series

The Distinguished Public Lecture Series continued into the World Year of Physics with lectures describing climate change, string theory, physics in medical imaging, and the use of optical imagers in Renaissance art.

The public lectures are usually held monthly on Tuesday evenings at 7:30 pm in Van Allen Hall. For more information on past lectures and upcoming talks, visit the Distinguished Public Lecture Series web site at www.physics.uiowa.edu/lecture_series/.



Prof. Vincent Rodgers demonstrates magnetic induction with two middle school students at a recent Hawk-Eyes on Science event.

What's New

Summer REU Program 2005

The second year of the department's NSF Research Experiences for Undergraduates (REU) Program was completed at the end of July. Designed to give undergraduates from other institutions the opportunity to do research for ten weeks in the summer, the program supported 11 students from colleges and universities across the country.

Research projects spanned a variety of areas, including a medical physics project related to radioactive waste gas storage, work on a spaceflight particle detector, and theoretical calculations in string theory.



Prof. Hallsie Reno (far left) and the 2005 REU summer program participants at the VLBA radio telescope facility in North Liberty, Iowa.

To supplement the lab or theoretical work under the supervision of individual faculty members, the students attended lectures and went on field trips to Fermilab and the radio telescope in North Liberty, Iowa. A *Communicating Science Program*, taught by Jessica Renaud, ran the course of the ten weeks, culminating in a morning of oral presentations by the students at the end of the program.

Juno Mission Award

The University of Iowa is a participant on a team selected to carry out a New Frontiers mission called Juno to go into polar orbit at Jupiter. Juno is de-

signed to study the deep interior of Jupiter in order to understand its origin, hence, provide information essential to

understanding the origin of the solar system. In addition, the mission will study Jupiter's polar magnetosphere for the first time. The University of Iowa Waves instrument for Juno will measure plasma waves in Jupiter's auroral region as well as make the first in situ observations of Jupiter's intense auroral radio emissions. The principal investigator for Juno is Dr. Scott Bolton at Southwest Research Institute in San Antonio, Texas. Research scientist Bill Kurth is the lead co-investigator for the Waves investigation. Prof. Donald Gurnett is a collaborator in the investigation. Juno is nominally set for launch during the summer of 2010 with arrival at Jupiter in 2015. The estimated cost for the Waves investigation, including data analysis, is about \$12 M.

2005 Alumni Fellow James Glanz

Dr. James Glanz (BS 1979), a 2005 University of Iowa Alumni Fellow, visited the department Sept. 7-10, 2005. During his visit, Dr. Glanz visited classrooms, met with faculty and students, and gave a presentation about his experiences since leaving the University.

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Faculty Highlights/Research (continued)

On June 20, 2005, an IGY Gold Club certificate was presented to Dr. **James Van Allen** to acknowledge his role in the International Geophysical Year (IGY) 1957-1958, a global program to study the geospace environment through coordinated ground and space observations. The IGY Gold Club identifies participants in this program (gold symbolizing the forthcoming 50th anniversary). For more information on the history of the IGY and the IGY Gold Club, visit the web site at http://ihy.gsfc.nasa.gov/igy_gold_reg.shtml or contact Kristine Sigsbee at kristine-sigsbee@uiowa.edu.

Dr. Van Allen also recently received the special honor of having the newest elementary school in the Iowa City Community School District named for him. On August 26, 2005 the James Van Allen Elementary School located in North Liberty, Iowa held a dedication ceremony with students, their parents, teachers and school board members in attendance. And the name of the school mascot? The Van Allen Rockets, of course.

Alumni

John Armstrong (BS 1998) has recently accepted a tenure track faculty position in physics at Weber State University (in Ogden, Utah) where he will teach and mentor a team of undergraduate researchers with the Virtual Planetary Laboratory and the NASA Astrobiology Institute. And spend a great deal of time skiing the “best snow on Earth!”

Currently **Adrian Barkan** (PhD 1997) is an Assistant Professor in the Physics Department at Bogazici University in Istanbul, Turkey. He and his wife went to live in Istanbul in 2003 as stipulated by her J-1 visa “Home Residency” requirement. In late 2005 this two-year requirement will be completed, and it is likely that they will return to the United States. Prior to coming to Turkey, his three jobs involved an unusual variety of research subjects: thermo-electric power conversion and fiber lasers in Ann Arbor, Michigan, and far-infrared “THz” research in Houston, Texas. Their daughter, who was born shortly after arriving in Istanbul, would not complain about their unsettled lifestyle since she gets to spend a large amount of time with both of her parents!

Adrian says “Hello!” to all of the alumni, faculty, and staff that he knew at Iowa in the mid ‘90s!

Jacqueline Coyne (BS 1999) is a contractor doing work as a patent application drafter. She currently resides in Jefferson, Iowa.

Ralph Lano (PhD 1996) is currently teaching software engineering at a small teaching college in Germany (www.fh-hof.de). Before that he worked for Siemens and Pearson Education. Ralph is always interested in hearing from old and new friends.

Stacy Palen (PhD 1998) was appointed an assistant professor in 2002 in the Physics Department at Weber State University in Ogden, Utah. She has also been appointed to the Astronomy Education Board of the American Astronomical Society, and is Director of the Ott Planetarium and observatory at WSU, which has a staff of six undergraduates and serves 12,000 members of the public every year. Stacy has an undergraduate team of seven that are looking for planets around binary stars in the Large Magellanic Cloud. She usually teaches Physics with Calculus, Quantum Mechanics, Astrophysics and Introduction to Astronomy.

Robert Winsor (BS 1993) is currently enrolled in the PhD program at Johns Hopkins University in Electrical Engineering (expected graduation 2006). He earned another undergrad degree in Mechanical Engineering at JHU several years ago, and also completed his MSE in Electrical Engineering. His Master’s thesis was “Waveguides for Microchip Optical Interconnects Embedded in a Silicon Substrate” which consisted of a highly efficient total-internal-reflection method of optically interconnecting emitters and detectors on microchips using standard silicon lithography and incorporated entry and exit coupling mirrors. Robert has been working at ITT for about 2-1/2 years. He is working on Free-Space-Optical communications systems, and currently has two patent applications related to this work. He also performs freelance optical design for ophthalmologists, and currently has one patent application related to an Intra-Ocular Lens. His main areas of research include adaptive optics, wavefront sensing and control, and novel

optical approaches to beam steering problems.

Scott Wollenweber (PhD 1996) has been working in the biomedical imaging field of Positron Emission Tomography since his graduate work at Iowa. His work as a scientist and systems engineer at GE Healthcare in Waukesha, WI includes system design, implementation and evaluation of PET and PET-CT imaging systems. Capturing science (papers, meetings) and intellectual property (patents) are also part of his corporate efforts.

Deaths

Robert Bock (MS 1936), died 6/23/2002.
Eugene Culp (MS 1942), died 6/25/2005.
Melvin Doelz (MS 1948), died 7/10/2004.
Lawrence Giacoletto (MS 1939), died 10/2004.
Paul Lahr (MS 1937), died 4/22/2003.
Philip McPartland (BA 1963), died 7/7/2002.
Robert Mendelson (PhD 1967), died 8/5/2001.
William Stanley (BA 1963), died 2/16/2001.
William Taylor (PhD 1973), died 7/16/2005.

Be part of the next newsletter!

Send us your latest alumni news by submitting it on the web. Go to the alumni web page at www.physics.uiowa.edu/alumni/ and click the “Alumni Update Form” link.

We look forward to hearing from you soon!

Students Receiving Degrees

Undergraduate

- Alexander Bulmahn**, B.S. physics & mathematics
Justin Cook, B.S. physics & astronomy
Andrew Cowan, B.S. physics & astronomy
Steven Dombeck, B.A. physics
Clint Hawthorne, B.A. physics
Jennifer Kaley, B.S. physics
Edwin Koerperick, B.S. applied physics & electrical computer engineering
Sarah Kringlen, B.S. physics & astronomy
James Lundberg, B.S. physics
Daniel Matthews, B.S. physics & astronomy
Nathan Quarderer, B.S. astronomy
Laura Spittler, B.S. physics & astronomy
Christopher Talcott, B.S. applied physics

Graduate

- Murat Aycibin**, M.S. molecular physics (Ph.D. program, University of Iowa)
Karthikayan Balakrishnan, M.S. astronomy and Ph.D. medical physics (post-doctoral fellow, Lawrence Berkeley National Laboratory)
Ahmed Diallo, Ph.D. physics (postdoc at the University of Iowa, beginning January 2006 will be a postdoc at EPF-Lausanne, Switzerland)
Yiwen Huang, M.S. particle physics (Ph.D. program, University of Iowa)
Su-Hyun Kim, Ph.D. plasma physics (postdoc, University of Iowa)
Peter Kortenkamp, Ph.D. physics (adjunct professor, University of Iowa)
Li Li, Ph.D. particle physics (software company, Mountain View, CA)
Jonathan Olson, M.S. particle physics
Jason Slattery, M.S. physics (teaching math and physics at Mesabi Range Technological and Community College)
Zhenzhen Wang, M.S. space physics (Ph.D. program, University of Iowa)
Lei Xin, Ph.D. physics (M.S. program, Actuarial Science, University of Iowa)
Murat Yildirim, M.S. photonics (Ph.D. program, University of Iowa)

Graduate/Undergraduate News

Student Awards

For the 2004-2005 school year, the following awards were presented:

Myrtle K. Maier Scholarship

Melanie Simet, Kelsey Clubb

William R. Savage Memorial Award

Joel Lamb

Strayer/Rairden Scholarship in Physics

(award renewable for up to four years)

Adam Heiniger (2003)

Catherine Whiting (2004)

Brian Freese (2005)

James A. Van Allen Awards

Justin Cook, Laura Spittler

Goertz/Nicholson Memorial Scholarship

Timothy Flanagan

John and Stacey Wahl Scholarship Award

Yunfei Huang, Omer Mermer

Staff News

Staff Recognition

This past year several staff members were recognized for their years of service by the University and the College of Liberal Arts and Sciences:

University of Iowa

Steve Hauser – 25 years

College of Liberal Arts & Sciences

George Hospodarsky – 10 years

David Morgan – 10 years

Two other staff members, William Kurth and Dale Stille, are serving appointments within their professional societies. The American Geophysical Union (AGU) elected William Kurth as secretary of the AGU Space Physics and Aeronomy Solar and Heliospheric Physics Section. He is currently in the second year of his two-year term. Dale Stille has just begun his term as president of the Physics

Students Receive Scholarships

Last year students Aaron Breneman and Evan Sengbusch received scholarships to further their education and research. Sophomore Evan Sengbusch was one of three University of Iowa students to receive the very prestigious national Goldwater Scholarship. He collaborated with Prof. Wayne Polyzou on a research project in theoretical nuclear physics. The Goldwater Scholarship will be used to cover the costs of tuition, books, fees, and room and board. Graduate student Aaron Breneman was selected to receive funding from the NASA Graduate Student Research Program. Aaron was one of only 22 students selected out of 118 proposals. He will receive a full stipend and tuition along with travel funds for his project to study chorus waves using the UI Wideband Data experiment on the European Space Agency - NASA Cluster spacecraft. Aaron also won the Best Student Paper at the American Geophysical Union Spring 2005 Meeting in New Orleans, Louisiana.

Instructional Resource Association (PIRA).

As president he will be coordinating the PIRA Lecture Demo Workshop, the paper sessions, the business meetings, and other PIRA activities that will be taking place at the American Association of Physics Teachers (AAPT) meeting in Syracuse, New York in August of 2006.

Arrivals and Departures

We'd like to welcome the following staff members to the department: Baptiste Cecconi, Dan Curtis, Ahmed Diallo, Hua Feng, James Hicks, Su-Hyun Kim, Brian Kurt, Niels Meyer, John Williams, and Jimin Zhao.

Those leaving the department include Chuanshun Cao, Scot Hawkins, Alexi Mestvirishvili, and James Sartain. We wish them the best of luck.



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Web: <http://www.physics.uiowa.edu/>

Visit the Alumni web site!
[www.physics.uiowa.edu/
alumni](http://www.physics.uiowa.edu/alumni)

Alumni Update Form

Let us know your latest accomplishments! To update our mailing list and include your news item in upcoming newsletters, complete the form below and return it to Aaron Votroubek, Department of Physics and Astronomy, 211 Van Allen Hall, The University of Iowa, Iowa City, IA 52242-1479. Or you can send us your information by going to the Alumni web page (www.physics.uiowa.edu/alumni/) and clicking on the 'Alumni Update Form' link. We look forward to hearing from you soon!

Name _____
First _____ Middle _____ Last _____

Home Address _____
City _____ State _____ Zip _____

Employer _____ Title _____

Work Address _____
City _____ State _____ Zip _____

Home Phone _____ Email _____

Year Graduated _____ Degree _____

Career Accomplishments and Other Information _____

Yes, I would be willing to serve as a mentor for a graduate or undergraduate student.

THE UNIVERSITY OF IOWA

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