Letter from the DEO

Community outreach, the subject of several of the newsletter items this year, has long been one of the features of our department, through the Hawk-Eyes on Science program and through contacts with Physics and Astronomy faculty and staff. On campus, student groups from regional schools or organizations come to Van Allen Hall for programs and demonstrations. Faculty, staff and students travel to schools, to clubs like the Optimist Club and the Cedar Amateur Astronomers and to the Café Scientifique at a local coffee shop to talk about physics and astronomy. On a regular basis, high school physics teachers come for summer workshops through the NSF funded QuarkNet program. We are happy to have had additional opportunities to share our experience and expertise this year. The exhibit, “University of Iowa Space Pioneers: 54 Years of Exploration,” was a partner to the NASA | ART exhibit at the Figge Art Museum in Davenport, Iowa which ran from July through October. We hosted a workshop for Iowa high school physics teachers in the second of a three year program of teacher professional development hosted at the three Iowa Regents’ Universities. We are privileged to serve the state not only through teaching undergraduates and graduate students and through research at the frontiers of science and technology, but also through our community outreach.

I hope you enjoy this edition of the newsletter, and if you are in the Iowa City area, please stop by to say ‘Hello’.

— Mary Hall Reno

RBSP Satellite Launches

NASA’s Radiation Belt Storm Probes (RBSP) dual satellite mission was successfully launched on August 30, 2012 from Kennedy Space Center. The satellites are carrying the Electric and Magnetic Field Instrument Suite and Integrated Science (EMFISIS) hardware that was developed by a team led by Prof. Craig Kletzing. The project has involved several staff members in our department including Bill Kurth, Scott Bounds, Jeff Dolan, and George Hospodarsky. The EMFISIS team is a collaboration between UI, the University of New Hampshire, Goddard Space Flight Center, UCLA, and Los Alamos National Laboratory. Many of the EMFISIS team members came to Florida to see the launch including our former Dean, Linda Maxson (see photo). Alas, launch conditions did not permit launch the first week, but were optimal for the actual launch a week later. The experiment is returning excellent data and has even been featured on NPR. The team is quite excited to have such a nice data set with which to work on radiation belt science.

In November, NASA renamed the RBSP mission the Van Allen Probes Mission in honor of Dr. James Van Allen who discovered the radiation belts in 1958.
Faculty Directory

Astronomy/Astrophysics
Kenneth Gayley, Assoc. Professor
Philip Kaaret, Professor
Cornelia Lang, Assoc. Professor
Randall McEntaffer, Assistant Professor
Robert Mutel, Professor
Steven Spangler, Professor
John Neff, Professor Emeritus

Condensed Matter/Materials Physics
Paul Kleiber, Professor

Atmospheric & Environmental Physics
John Neff, Professor Emeritus
Steven Spangler, Professor
Robert Mutel, Professor
Randall McEntaffer, Cornelia Lang, Assoc. Professor
Philip Kaaret, Professor
Kenneth Gayley, Assoc. Professor

Faculty Highlights/Research

Professor Cornelia Lang spent Summer 2012 as a “Resident Shared Risk Observer” at the National Radio Astronomy Observatory’s Very Large Array (VLA) scientific headquarters in Socorro, New Mexico. She and her collaborators were awarded observing time using “shared risk” modes of the recently upgraded VLA instruments. During this period of residency, she participated in, as well as worked on, calibration and analysis of her observations of giant molecular clouds in the unique Galactic center region of our Galaxy. Iowa graduate students Natalie Butterfield and Dominic Ludovici visited Professor Lang at the VLA to participate in a summer school and work on the new observations. In addition, undergraduate Susan Schmitz (Class of 2014) also visited Prof. Lang to work on research for a week and tour the instrument.

Professor Lang served as one of the members on the National Science Foundation (NSF) Portfolio Review Committee, convened in the Fall of 2011 to make recommendations to the Astronomy division about setting priorities for the next decade in terms of the grant programs and facilities that the NSF supports. The report she co-authored is entitled, “Advancing Astronomy in the Coming Decade: Opportunities and Challenges” and can be found at the following website: http://www.nsf.gov/mps/ast/ast_portfolio_review.jsp.

In August 2012, Professor Lang was awarded approximately $108,000 from the Office of the Provost in response to their call for “Student Success Proposals.” Professor Lang’s proposal is entitled, “TILE Learning Across the Disciplines: Development of the First TILE-Constellation Course ‘Origins of Life in the Universe’ ” and is a collaboration between the Departments of Physics & Astronomy, Biology, Chemistry, Geosciences, and Anthropology. Support is for development of a new type of General Education Requirement course which would serve first and second year undergraduate students and would bring together faculty from different disciplines to address a common topic of interest - the one Professor Lang chose revolves around the exciting field of astrobiology and life in the universe. The course would be a year in length, so students would have the opportunity to work directly with faculty, TAs, and other classmates for an extended period of time to develop their problem-solving, writing, and analytic skills. The TILE-Constellation course Professor Lang will develop will serve as a framework from which other multidisciplinary courses on campus will emerge.

CERN announced the observation of a new (Higgs-like) boson on July 4, 2012 by both ATLAS and CMS. Professor Usha Mallik’s group of researchers in the ATLAS experiment are eagerly pursuing a decay of this new boson into a b and anti-b quark pair, a pair of fermions. This will be a milestone measurement to establish the properties of this new boson which people are assuming to be the Higgs. It may also help shed light on whether it is the one expected from the Standard Model or has other siblings, a burning question now.

In January 2012 Dr. Maaike Limper, a postdoc from her group started a CERN fellowship. An Iowa Assistant Research Scientist from her group, Dr. Prafulla Behera is now an Associate Professor at the Indian Institute of Technology in Chennai; he started in 2011.

Department Welcomes New CLAS Dean Chaden Djalali

In August, Chaden Djalali became the Dean of the UI’s College of Liberal Arts & Sciences. Djalali replaces former Dean Linda Maxson who retired this year.

Before coming to Iowa, Djalali was a faculty member of the University of South Carolina’s Department of Physics & Astronomy, where he served as chair from 2004-2012. His physics research includes intermediate energy nuclear physics and hadronic physics. Besides his research and teaching duties at South Carolina, he contributed greatly to undergraduate and graduate curriculum development, and was also involved in university governance.

The Department welcomes Dean Djalali and looks forward to working with him in the coming years.
Faculty Directory (continued)

Photonics & Quantum Electronics
Theoretical
Michael Flatté, Professor
Craig Pryor, Associate Professor
Experimental
Thomas Boggess, Professor
John Prineas, Associate Professor
Arthur Smirl, Professor
Markus Wohlgenannt, Associate Professor

Plasma Physics
Theoretical
Scott Baalrud, Asst. Professor
Gregory Howes, Asst. Professor
Georg Knorr, Professor Emeritus
Experimental
John Goree, Professor
Robert Merlino, Professor
Frederick Skiff, Professor

Space Physics
Theoretical
Jack Scudder, Professor
Experimental
Donald Garnett, Professor
Craig Kletzing, Professor
Louis Frank, Professor Emeritus

VISITING PROFESSOR
E. G. D. Cohen

VISITING ASSISTANT PROFESSOR
Shea Brown

ADJUNCT ASSOC. PROFESSOR
David Berman

ADJUNCT ASST. PROFESSORS
Uğur Akgun
Firdevs Duru
Su-Hyun Kim
William Peterson

JOINT FACULTY APPOINTMENTS
David Andersen, Professor (Electrical & Computer Engineering)
Richard Hichwa, Professor (Radiology)
Mark Madsen, Professor (Radiology)
Alfredo Siochi, Assistant Professor (Radiation Oncology)
John Sunderland, Assoc. Professor (Radiology)

Faculty Highlights/Research

Yannick Meurice co-organized a workshop and conference on “Critical behavior of lattice models in atomic and molecular, condensed matter and particle physics,” at the Kavli Institute for Theoretical Physics China at the Chinese Academy of Sciences in Beijing from July 24-August 31, 2012. The program brought together lattice practitioners across fields, across experience (from graduate students to senior scientists) and from institutions internationally.

Jane Nachtman, Ed Norbeck and Yasar Onel, and the rest of their research group, are celebrating the finding in CMS of a particle of mass 125 GeV/c² that is likely the long sought Higgs boson. As the photon is to the electromagnetic field, the Higgs boson is the particle associated to the Higgs field that allows fundamental particles to have mass. Without the Higgs field everything in the universe would be moving with the speed of light. The UI-CMS group was one of the founding members of the CMS (Compact Muon Solenoid) experiment 20 years ago. This huge device is located at one of the points where the two protons beams collide at the Large Hadron Collider (LHC) at the CERN particle physics laboratory on the border of Switzerland and France. Our high energy nuclear physics group is also searching data from CMS for evidence of new physics predicted by models such as supersymmetry and heavy neutrinos and is also looking for unexpected physics that may be revealed by proton-proton collisions at the record high energy of 8 TeV.

Professor Charles Newsom retired from teaching after serving the Department for over 27 years. We wish him the best in his retirement.

New Faculty

The Department welcomes assistant professor, Scott Baalrud, to the University of Iowa. Prof. Baalrud received his M.S. and Ph.D. degrees in engineering physics at the University of Wisconsin-Madison and was previously a postdoctoral research fellow at the University of New Hampshire. His research interests are basic and applied plasma physics, including magnetic reconnection, strongly coupled plasmas, wave-particle interactions, instabilities, double layers, sheaths, and electron sources. His research in theoretical plasma physics focuses on the fundamental aspects of plasma theory which contribute to modern experiments, space physics and industrial applications of plasma. He plans to build a program based on these research areas and to also study quantum effects in high energy density plasma (HEDP) found in inertial confinement fusion (ICF) experiments.

Prof. Baalrud is currently working as a Feynman Fellow at the Los Alamos National Laboratory in New Mexico, pursuing research opportunities that will enhance his research and teaching when he arrives at Iowa in the Fall of 2013.

In Memoriam: Glenn Joyce

Glenn Joyce, former UI physics professor, passed away December 4, 2011. He was 72 years old. Glenn was born June 24, 1939, in St. Louis, MO. He attended high school in Sikeston, MO, and Central College in Fayette, MO and graduated with a B.S. in 1961. He received his Ph.D. in physics at the University of Missouri (1966) and then joined the faculty at the University of Iowa, and became a full professor. In 1979 Glenn left the UI and moved to Alexandria, VA and worked at the U.S. Naval Research Laboratory. He was a senior research scientist until his retirement in 2004, after which he worked as a contractor.

Glenn is survived by his wife of 49 years, Anne, of Alexandria, his son, Adam, sisters Lou Bradshaw of Bellingham, WA, and Carol Joyce of Minneapolis, MN, two grandchildren, seven nieces and nephews, and eight grandnieces and grandnephews.
Students Receiving Degrees

Undergraduate

Radhika Akolar, B.S. astronomy
Adam Buffington, B.S. physics
Suzanne Carter, B.S. physics & mathematics
Angela Cooper, B.S. physics & astronomy
Alyssa Grigsby, B.S. physics & mathematics
Peter Haugen, B.S. physics
Ryan Hood, B.S. physics & astronomy
Jared Moon, B.S. applied physics & astronomy
Michael Olinski, B.A. physics
Colorado Reed, B.S. applied physics
Patrick Schmidt, B.S. physics & mathematics
Joseph Schmitt, B.S. physics & astronomy
Jared Stewart, B.A. physics & mathematics
Chun-Shang (Tim) Wang, B.S. physics
Alexander Wold, B.S. physics & astronomy
Kenneth Zuerner, B.S. physics & astronomy

Graduate

Elif Albayrak, Ph.D. elementary particle physics
Alaaf Alfaiakaw, M.S. condensed matter physics
Bradley Barnhart, Ph.D. engineering physics
Jonathan Heinrich, Ph.D. plasma physics
Xiaolong Liu, Ph.D. elementary particle physics
Eric Loren, Ph.D. condensed matter physics
Ben Moehlmann, Ph.D. condensed matter physics
Dennis Norton, M.S. condensed matter physics
James Rybicki, Ph.D. condensed matter physics
Kevser Sahin-Tiras, M.S. interdisciplinary with Chemistry
Emrah Tiras, M.S. condensed matter physics
Kazuma Tsurusaki, Ph.D. astrophysics

Graduate/Undergraduate News

Student Awards and Scholarships

For the 2011-2012 academic year, students received the following awards:

Brian D. Strayer and Richard L. Raipen Scholarship in Physics
Nolan Grieves (renewal)

James A. Van Allen Award
Suzanne Carter, Colorado Reed

Myrtle K. Maier Scholarship
Amanda Parker (renewal), Teresa Lackey, Susan Schmitz

Edward & Martha Althaus Smith Scholarship
Patrick Fischer

Distinguished Service Award
Peter Haugen, Tyler Kent, Teresa Lackey, Colorado Reed

Undergraduate Scholar Award
Joseph Schmitt

Goertz/Nicholson Memorial Scholarship
Kristopher Klein

John and Stacey Wahl Scholarship Award
Christopher Doran, Yuzhi Liu

Joseph E. and Ursil I. Callen Prize
Colorado Reed

Guy and Betty Williams Scholarship
Kenneth Heitritter

2012 Goldwater Scholar
Nicholas Rolston

2012 Churchill Scholar
Suzanne Carter, Colorado Reed

2012 John Mather Nobel Scholarship
Patrick Fischer

This year the following were invited by the Alpha of Iowa chapter to accept membership in the Phi Beta Kappa Society: Patrick Fischer, Nolan Grieves, Andrew Metzger, Jeffrey Moore, and Nicholas Rolston.

Congratulations go out to all our students for their hard work and excellence in academics and research.

Fall 2012 Student Enrollment

Following are departmental student enrollment numbers for Fall 2012:

Total undergraduate majors—136
New students—52
Male students—121
Female students—15

Total graduate students—81
New students—14
The new grad students come from China, Russia, Turkey (2) and the USA (10).
Domestic students—53
International students—28
Male students—67
Female students—14

Staff News

Awards & Recognition

This past year, departmental staff were well represented with awards for longevity, work excellence and leadership.

CLAS Longevity Award
Joseph Groene – 20 years
Scott Bounds – 10 years
Larry Detweiler – 10 years
Ianos Schmidt – 10 years
Joanne Seeberger – 10 years

University Longevity Award
Kathy Kurth – 35 years
Barb Alton – 30 years
Debbie Foreman – 25 years
Dale Stille – 25 years

2012 Goldwater Scholar
Nicholas Rolston

2012 Churchill Scholar
Suzanne Carter, Colorado Reed

2012 John Mather Nobel Scholarship
Patrick Fischer

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CLAS Mary Louise Kelley Staff Excellence Award
Larry Gramroth

CLAS Mary Louise Kelley Professional Development Award
Dale Stille

Board of Regents Staff Excellence Award
Jolene Pickett

NASA Outstanding Public Leadership Medal
William Kurth

Retirement

We wish Debbie Foreman the best in her retirement after more than 13 years of service in the Department.
What’s New

Figge Art Museum Partners with Department on NASA | ART Exhibition

From July 14 through October 7, 2012, the Figge Art Museum in Davenport hosted the traveling Smithsonian exhibition NASA | ART: 50 Years of Exploration, with a companion display of spaceflight instruments and models designed and built by University of Iowa Department of Physics and Astronomy staff.

Mary Hall Reno and especially Kathy Kurth, along with UI Libraries Special Collections and Archives, helped to coordinate the display of historic UI instruments that are not routinely accessible to the public. The UI display included spares of a Loki rockoon, Explorers 1 and 3 payloads, Mariners 3 and 5 instruments, an Injun 3 satellite, a Hawkeye satellite, a Voyager instrument case, and models of Pioneer 10/11 and the currently operating Cassini and Juno spacecraft. A music and video production by the Kronos Quartet based on sounds of space gathered by U. of Iowa Prof. Don Gurnett was included as part of the Smithsonian exhibit.

In addition to the displays, Professors Craig Kletzing and Don Gurnett each presented public lectures highlighting the University’s role in past, present, and future space research.

“We’re always trying to find ways to collaborate with other institutions,” says Rima Girnius, associate curator for the Figge. “And since the University of Iowa has always been at the forefront of space research, we couldn’t pass up that opportunity.” Exhibiting the spaceflight instruments alongside the artwork they made possible reinforces “the connection between science and art,” says Girnius.

Department Establishes PhD Astronomy Subtrack Degree

Graduate students in the Department of Physics and Astronomy have long been offered the opportunity to earn MS degrees in Physics or Astronomy, and PhD degrees in Physics with thesis topics from the broad range of research interests represented by our faculty members. New this year is an Astronomy subtrack to the PhD in Physics. The new subtrack has similar requirements to the physics track, with the exception that the required coursework includes astronomy courses that substitute for a portion of the Mechanics, Classical Electrodynamics and Quantum Mechanics core curriculum of the standard track. With six astronomy/astrophysics and three space physics faculty members and a number of other faculty members with related interests, the new subtrack relies on our current expertise. We anticipate that the new subtrack will bring more graduate students to the University of Iowa for graduate work in astronomy and astrophysics.

Summer Workshops Give High School Physics Teachers Tools to Improve Classroom Experience

Twenty-four high school physics and physical science teachers from across the state came to the Department of Physics and Astronomy in June 2012 for a three-week summer workshop on teaching Newtonian mechanics. Based on the “Modeling Instruction Program” developed at Arizona State University under the leadership of David Hestenes, the workshop was led by master teacher Shannon McLaughlin, a physics teacher in Norwalk, Iowa. The workshop was made possible by the support of a Roy J. Carver Charitable Trust grant to the Iowa Mathematics and Science Education Partnership, subcontracted to the University of Iowa with Prof. Mary Hall Reno as the UI contact. The program was the

(continued on page 7)

Voyager: 35 Years of Space Exploration

On Sept. 5, 2012, NASA celebrated the 35th anniversary of the launch of the Voyager 1 and 2 spacecraft. The journeys of the Voyager spacecraft began with the launch of Voyager 2 on Aug. 20, 1977, followed by the launch of Voyager 1 on Sept. 5, 1977. For the past 35 years, the twin Voyager spacecraft have been exploring the regions of our outer solar system, and are currently traveling away from our Sun where no man-made objects have gone before. Each Voyager spacecraft carries a University of Iowa plasma wave instrument built under the direction of Prof. Don Gurnett.

Bill Kurth, along with a team of Iowa researchers and investigators from other institutions, are eagerly analyzing data for evidence that could indicate when Voyager 1 leaves the heliosphere and enters interstellar space. Although it may be difficult to pinpoint the exact moment when the boundary called the heliopause is crossed, based on unusual variations in the cosmic ray intensity observed by Voyager 1 in May 2012, some scientists believe that Voyager 1 may be near the boundary. The cosmic ray intensity is expected to increase as the spacecraft crosses into interstellar space.

Voyager 2 is now the longest-operating spacecraft ever launched, and as of Aug. 13, 2012 is about 9 billion miles away from the Sun, heading in a southerly direction. Voyager 1 is the most distant man-made object at more than 11.3 billion miles from the Sun, and is heading in a northerly direction. “At that great distance it takes more than 16 hours for a radio signal to travel from the spacecraft to NASA’s Deep Space Network antennas. The signal strength is so incredibly weak that it requires a giant 210-foot diameter dish antenna to pick up the signal,” says Don Gurnett.

Once Voyager 2 crosses the heliopause, the onboard instruments will measure the strength and direction of the magnetic field pressing against the outside of the heliosphere. It is estimated that the two spacecraft will have enough electrical power to continue collecting data and communicating it back to Earth through 2020, and possibly through 2025. Voyager updates are available at http://voyager.jpl.nasa.gov/.
Outreach Program Continues to Grow

Over the years, the Department’s Outreach program has grown considerably. Thanks to the support of the University and local community, the Department is able to bring science to children and students who will be our future scientists and teachers. To help provide equipment and programming for 2012-2013, the Hawk-Eyes on Science outreach program garnered two grants this year. The grants came from the American Association of Physics Teachers (AAPT) Bauder Fund and the University of Iowa “Expanding and Enhancing STEM Initiatives Within CLAS” which is part of the “Better Future for Iowans” initiative funded through the Provost’s Office. This newly funded initiative focuses on space exploration and astronomy, highlighting the University’s historical and ongoing role in these activities. The target audience will be local elementary and middle schools, with the long-term goal of expansion to other locales such as public libraries, astronomy clubs, or other large scale presentations. The complete stand-alone outreach platform will consist of a suite of hands-on demonstrations including such items as a set of real spacecraft, prototypes of early rocketry and modern-day spacecraft and instrumentation packages, a solar telescope for hands-on viewing of sunspots and solar prominences, spectrum tubes and spectrum analyzer glasses for understanding the fingerprints of different elements in the universe and how to detect them, rocket propulsion demonstrations, instrument power (solar panels, radioactive decay), and activities related to the scale/scope of the universe.

Through the Hawk-Eyes on Science program nearly 40 presentations were given by faculty, staff and students to elementary schools, high schools and other groups across the state of Iowa. The Department held its 5th annual Physics and Astronomy Public Demonstration Show, “2012 - Space and Spacecraft.” The show focused on space weather and included demonstrations on sensing magnetic fields, electron beams, making plasmas, a small rocket engine, lighting whistlers, and a “Sun” song. Audience members were also able to view and touch actual spacecraft and meteorites. The demonstration show has been extremely successful and will be held again March 7, 2013. Another outreach program, Café Scientifique, is now in its seventh year and continues to provide public lectures to the community on various scientific topics.

In July, outreach coordinator and instructional resource specialist, Dale Stille and Prof. Michael Flatté won the 1st Place award in the 2012 American Association of Physics Teachers (AAPT) Apparatus Competition for their entry “Faraday Rotation Apparatus for Lecture Demonstration” which took place in Philadelphia, PA. The $1,000 award was from PASCO, a leading manufacturer of physics equipment, who generously supports the Apparatus Competition with all monetary awards.

In October, Dale Stille was also recognized for his hard work and dedication to the outreach program when he was selected by the College of Liberal Arts & Sciences to receive a Mary Louise Kelley Professional Development Award. The $500 award will be used to support Dale’s attendance at the 2013 AAPT Meeting that will be held in Portland, OR.

If you’d like to suggest a topic for an outreach activity, or participate in outreach as a presenter or volunteer, contact the coordinators, Dale Stille (dale-stille@uiowa.edu), Vincent Rodgers (vincent-rodgers@uiowa.edu) or Greg Howes (gregory-howes@uiowa.edu).

Your support benefits Physics and Astronomy education and research!

To make a contribution, go to the Department’s online gift web site at

http://www.givetoiowa.org/physics

Your gifts are greatly appreciated!
Alumni

Matthew Goeckner (PhD 1990) received the 2011-2012 President’s Outstanding Teaching Award at the University of Texas at Dallas. The President’s Outstanding Teaching Award is one of the University’s highest accolades for faculty. Matthew, a faculty member at UT Dallas since 1999, is a professor and head of the Department of Mathematical Sciences and also a professor in five other departments.

Andrew Lytle (BS 2004) was presented with the 2012 Ken Wilson Lattice Award at the Lattice 2012 Conference held in Cairns, Australia in June 2012 for his contribution to the paper titled “The \( K \to (\pi\pi)_{I=2} \) Decay Amplitude from Lattice QCD” ([hep-lat] http://arxiv.org/abs/1111.1699v1). The award was given because the work presented in the paper has led to the first reliable results in weak kaon decays related to the \( K\to (\pi\pi)_{I=2} \) problem, one of the longest-standing challenges in lattice research.

Britt Scharringhausen (BS 1996), a faculty member of the Physics & Astronomy Department at Beloit College in Beloit, Wisconsin, received tenure and was promoted to the rank of associate professor.

Laura Spitler (BS 2005) has just completed her PhD work at Cornell University under the supervision of Prof. James Cordes on the topic of “Saving time: New instrumentation and methods for studies of radio variability.” She is moving to Bonn, Germany for a postdoc position at the Max Planck Institute for Radio Astronomy.

After earning his Bachelor’s Degree at Iowa, Jonathon Talcott (BS 2001) received a M.S. degree in Electrical Engineering at UC-San Diego, and a Juris Doctor of Law degree from the Sandra Day O’Connor College of Law at Arizona State University. His career has included employment as an electrical hardware engineer for Rockwell Collins in Cedar Rapids, a litigation associate for Fish & Richardson P.C. in Minneapolis, Minnesota, and is now currently an intellectual property litigation attorney for Ballard Spahr LLP in Phoenix, Arizona.

Space physicists at Iowa, also Alumni, are recognized

Two alumni working in the Department have been recognized for their contributions in space physics research.

William Kurth (BA 1973, MS 1975, PhD 1979) received a 2012 NASA Outstanding Public Leadership Medal. The medal is awarded to non-government employees for notable leadership accomplishments that have significantly influenced NASA missions. Bill is the lead co-investigator for the Juno Waves Investigation and for the Van Allen Probes Waves Investigation, and he has been part of leadership teams on several other missions, including Voyager, Galileo, Polar, and Cassini.

Jolene Pickett (BS 1982) was a Board of Regents Staff Excellence Award winner in 2012. This award is presented to staff members “whose accomplishments have significantly benefited the university, brought honor or recognition to the university, and had a significant positive impact on the state of Iowa.” Jolene’s award recognized her role on the Cluster Wideband Plasma Wave Investigation as principal investigator for instrument operation and data analysis.

Deaths

Davis Sentman (PhD 1976), died 12/15/2011.

What’s New (continued)

second year of a three-year Regent’s Universities program following the successful 2011 Iowa State University summer teachers’ workshop.

A long-standing summer program for teachers in the Department of Physics and Astronomy is the National Science Foundation funded QuarkNet program. Each summer, a few high school students and their teachers join the high energy particle physics group in their on-going research activities in detector development and testing. In alternate years, a weeklong institute for high school teachers is held. In summer 2012, the institute involved 19 teachers in activities focused on the CERN Large Hadron Collider and the interplay between high energy physics results and cosmology, strategies to align current physics results with the Iowa Core Curriculum, and activities associated with the QuarkNet Cosmic Ray Muon Telescopes. Prof. Yasar Onel is the principal investigator on the UI QuarkNet project, and Peter Bruecken, a teacher at Bettendorf High School, is the long term teacher-leader of the program.

Group photo of high school teachers who participated in the 2012 summer workshop on Modeling Instruction.
We want to hear from you!

Be part of the next newsletter by sending us your latest accomplishments. You can submit your news items on the web at

www.physics.uiowa.edu/alumni/

and click the “Alumni Update Form” link.

We look forward to hearing from you soon!

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Career Accomplishments and Other Information

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