Hiner winning the University’s Outstanding Teaching Assistant Award, Mr. Suat Ozkorucuklu receiving second prize of the George Michail Memorial Poster Award at New Perspectives 2000, a graduate students’ conference at Fermi National Laboratory. For the second consecutive year a Physics and Astronomy graduate was selected as a College of Liberal Arts alumni fellow. Jim Hansen joins James Van Allen as our two alumni fellows.

A combination of gift funds and departmental funds was used to renovate our commons room, which provides a place for students to work and socialize with faculty and staff. I sincerely appreciate everyone’s contributions to the physics and astronomy gift fund. This year I am also pleased to announce significant gifts that fund new scholarships. These include a new scholarship for first year graduate students in the name of Dwight Nicholson, established by contributions from Mei-Mei Shen and Gordon Sun, a new scholarship to help with undergraduate travel and research by Charlie Wert, and a significant unrestricted gift that will be used for a student scholarship by Henry Swift. We are grateful to the individuals who have established these new scholarships and continue to be appreciative of alumni and friends who have continued to support our many other scholarships which directly impact our students.

I am pleased to bring you the second annual newsletter of the Department of Physics and Astronomy. This will be my last year as DEO. While I look forward to returning to teaching and research, my four years as DEO have been very rewarding. The success of our department is a result of the combined efforts of many devoted individuals. Being DEO provided me with an appreciation of the many contributions made by our faculty, staff, students, alumni, and board members. Their contributions make the Department an excellent environment for research and education.

This year was another good year. Faculty research remains a source of pride. Annual external funding is approximately $10 million, which is the highest per faculty member funding in the Big 10. Some highlights include: Professor Flatté’s research on superconductors was featured in the cover story of the March issue of Physics Today and Professor Goree’s work on Mach cones in dusty plasmas was featured on this year’s APS calendar and directory. Professor Goree will also participate in the Plasma Kristall Experiment which will be the first physical science experiment on the International Space Station. The documentary, “Flights of Discovery,” on James Van Allen’s career, narrated by Tom Brokow, was completed this year.

It is always great to see the success of our students. Selected highlights include Mr. Jason
Faculty Directory

**Astronomy/Astrophysics**
- Benjamin Chandran, Assistant Professor
- Kenneth Gayley, Assistant Professor
- Richard Ignace, Visiting Asst. Professor
- Robert Mutel, Professor
- Steven Spangler, Professor
- John Neff, Professor Emeritus

**Atomic & Molecular Physics**
- Wayne Polyzou, Professor
- Gerald Payne, Professor
- William Klink, Professor

**Condensed Matter/Materials Physics**
- Usha Mallik, Professor
- John Schweitzer, Professor
- Thomas Hasenberg, Associate Professor
- Arthur Smirl, Professor

**Elementary Particle Physics**
- Michael Flatté, Associate Professor
- John Goree, Associate Professor
- Louis Frank, Carver/James A. Van Allen professor of physics, has been elected to the Editorial Board of Space Science Reviews.

**Nuclear Physics**
- Richard Carlson, Professor Emeritus

(continued on page 3)
Faculty Highlights/Research

Richard Ignace received a three-year grant (in collaboration with Prof. J. Bjorkman of the University of Toledo) from NSF entitled “Probing Circumstellar Envelopes with Gravitational Microlensing.” Prof. Ignace received observing time (with Prof. J. Brown and Dr. L. Oskinova of the University of Glasgow) to study evolved hot massive stars called Wolf-Rayet stars with XMM-Newton, a European X-ray satellite. Prof. Ignace has also co-authored a popular level book entitled, “Discovering the Universe” (London: Philips) with Prof. R. Prinja at the University College-London that is expected to appear in the summer of 2001.

Paul Kleiber and Tom Boggess have been elected to three-year terms as divisional representatives to The University of Iowa College of Liberal Arts Faculty Assembly.

In February, Craig Kletzing was one of five University of Iowa faculty members awarded a 2000 Faculty Scholar Award. Prof. Kletzing will study waves associated with the aurora borealis by using measurements from a sounding rocket launched from Alaska in 2002 and laboratory measurements made with the Large Plasma Device at UCLA. As a Faculty Scholar, he is released from half of his respective teaching, advising, administrative and service responsibilities for three years. The award takes the form of a developmental assignment for one semester each year. Prof. Kletzing gave a Saturday Scholar presentation this fall entitled, “The Auroral Borealis: Nature’s Lightshow in the Sky.”

Robert Mutel received a grant from the National Science Foundation to upgrade the telescope in the Iowa Robotic Observatory. The grant is to develop a turnkey robotic observatory system with a companion curriculum that can be used for both college and high school students. Information on this research, known as Project Rigel, can be found on the internet at http://denali.physics.uiowa.edu/rigel/.

Charles Newsom has been appointed a Research Fellow at the Univ. of Texas Memorial Museum in recognition of his continuing contributions in paleontology.

Wayne Polyzou has been elected a member of the executive committee of the Few-Body Systems and Multiparticle Dynamics Group (GFB) of the American Physical Society.

In January, Mary Hall Reno was selected as a Dean’s Scholar in The University of Iowa College of Liberal Arts. The Dean’s Scholar award recognizes excellence in teaching and supports the professional growth of faculty members. Prof. Reno plans to use the award for travel to meet with collaborators and attend conferences and workshops. Through this award, she would also like to help other researchers to travel to the UI, so students and faculty may learn firsthand about the most recent findings in the field of particle physics, especially in neutrino physics.

Jack Scudder has been cited in the media for his recent experimental documentation of the elusive process of magnetic reconnection. This process initiates an interconnection between the sun and the earth that ultimately causes the charged particles to enter our atmosphere near the magnetic poles making the auroras. Prof. Scudder’s observations have provided the first direct evidence of this initiating process that was predicted thirty years ago.

Fred Skiff has been promoted to the rank of Professor.

James Van Allen, Regent Distinguished Professor, remains active in his research with Pioneer 10. The University of Iowa instrument on Pioneer 10 continues to provide valuable data on the intensity of cosmic rays in the heliosphere as solar activity approaches its 11-year cyclic maximum. Between January and July 2000, the intensity declined by about 10 percent, signaling the delayed arrival of increased turbulence in the solar wind and showing that the spacecraft is still inside the heliosphere. The heliocentric distance of the spacecraft is now beyond 76 AU in the antapex direction and is increasing at the rate of 2.6 AU per year (Van Allen and Randall). A new paper, “On the modulation of galactic cosmic ray intensity during solar activity cycles 19, 20, 21, 22 and early 23,” by Van Allen was published in the August 15th edition of Geophysical Research Letters.

A documentary entitled, “James Van Allen—Flights of Discovery” has also been produced about Van Allen and his research over the years. Information on this documentary can be found on the internet at http://www.jamesvanallen.com/.
The Department of Physics and Astronomy conducted many successful outreach programs this past year. Besides visits to the Department by several high school science classes, the Department sent many students, teaching assistants, staff, and faculty to talk to surrounding high school, junior high, and elementary groups and classes. Several faculty members also participated in job shadowing with students, so students would see what it is like to be a physicist for a day. Faculty members who gave talks at area schools included Profs. Tom Hasenberg and Richard Ignace (Southeast Junior High, Iowa City), Wayne Polyzou and Vincent Rodgers (Northwest Junior High, Coralville), and Fred Skiff (Mid-Prairie High School, Wellman). Research group members of Profs. Louis Frank and Donald Gurnett were also very involved in the community by visiting area schools and presenting talks to many different organizations.

Other outreach highlights included a program initiated by Lecture Demonstration Coordinator, Dale Stille, to lend demonstration equipment to high school teachers, and also train them in the use of the equipment. The Department also has a program which donates surplus laboratory equipment to high schools in Iowa. This program donates such items as power supplies, wave generators, magnetometers, weight sets, and oscilloscopes. Two of the largest recipients to date have been North High School, Des Moines, IA and Calamus-Wheatland High School, Wheatland, IA.

This past year the department participated in the Belin-Blank Information and Technology Fair by hosting a booth which displayed a large array of demonstrations. Profs. Wayne Polyzou, Mary Hall Reno, and Vincent Rodgers represented the Department as well as Dale Stille (Lecture Demonstration Coordinator), Ramon Torres-Isea (Lab Coordinator), and Andreas Soemadi (Graduate Student).

In February, a group of six faculty and staff members visited Rockwell Collins in Cedar Rapids. Alan Tribble, a former physics PhD student, organized the discussion and tour with approximately eight Rockwell Collins employees who work in the human resources and advanced research divisions.

Through these many programs, the department continues to strive to educate the public in the many areas of research and academics related to physics and astronomy.
Alumni News

1990s

Der-Jun Jang (PhD 1998) has been appointed as an Assistant Professor at National Sun Yat-sen University in Taiwan.

Hsien-Chih Jean (PhD 1992) has joined Monterey Design Systems of Sunnyvale, CA, as a QA Manager.

Jerry Harrington (BS 1991) finished his MS and PhD degrees at Colorado State University in Atmospheric Sciences (1997). He is currently an Assistant Professor of Atmospheric Sciences at the Geophysical Institute/Physics Department at the University of Alaska in Fairbanks.

1980s


Mary Severson (BS 1988) works as an Instrumentation Technologist at the University of Wisconsin Synchrotron Radiation Center in Stoughton, WI. She helps graduate students develop their knowledge of experimental equipment as well as designing, building, and maintaining beamlines on the storage rings. She has authored two papers and co-authored several concerning instrumentation for synchrotron radiation. After receiving his PhD degree in nuclear physics at the University of Maryland at College Park (1987), David Mack (BA 1981) was a three-year postdoc at the Tri-University Meson Facility in Vancouver, BC. He then joined Hall C at CEBAF in Newport News, VA, during the construction phase. Now called TJNAF (Thomas Jefferson National Accelerator Facility), he currently works as a Staff Scientist II, where he’s involved in a busy program of intermediate energy electron scattering experiments.

1970s

Dennis Henry (PhD 1978) is currently a Professor of Physics at Gustavus Adolphus College in St. Peter, MN.

Joel Weisberg (PhD 1978) is a Professor in the Department of Physics and Astronomy at Carleton College in Northfield, MN.

Michael Hotka (1977) is a member of the technical staff at Lucent Technologies in Denver, CO, where he writes software for telecommunication products. He also teaches general astronomy to local groups at public star parties, using his 12.5” f/8 telescope.

1960s

Dick Berggren (PhD 1969) is retired from Hughes Aircraft Co. in El Segundo, CA, where he was an Electromagnetic Effects Scientist/Engineer. He currently resides in Red Oak, IA.

John Tanis (MS 1969) is Professor and Chair in the Department of Physics at Western Michigan University in Kalamazoo, MI. He has been elected as an APS Fellow (1989) and a University Distinguished Faculty Scholar (1994), and he has had US DOE funding since 1983 involving his research on atomic collisions.

James Leeper (BA 1967) is a Professor at the University of Alabama at Tuscaloosa. He has been department chair since 1986 at the U. of Alabama, College of Community Health Sciences, Department of Behavioral and Community Medicine.

1950s

George Ludwig (MS 1959) retired in 1991 from NASA as an Independent Consultant in space station design, NASA space sciences and earth applications data processing, and aerospace industry research and development. George currently resides in Winchester, VA and uses his time to write, travel, and enjoy family.

Donald Thompson (PhD 1953) is a retired consultant, Emeritus Professor of Aeronautics and Space Engineering, and Anson Marston Distinguished Professor in Engineering from Iowa State University in Ames, IA. He is also a Rockwell Int’l. Science Center Distinguished Fellow, Member of the National Academy of Engineering (NAE), American Physical Society (APS) Fellow, and an IEEE Fellow. He currently resides in Clear Lake, IA.

1940s

Prior to his retirement in 1974, Irvin Swift (PhD 1943) was director of research and development for military purposes in one navy and two industrial laboratories. He now resides in Albuquerque, NM.

1930s

Floyd Bowling (MS 1938) retired from Tennessee Wesleyan College where he was a Professor. He served in academic work for 60 years. He received his doctorate from the University of Tennessee in 1953 and later received an Honorary Doctorate of Science from Tennessee Wesleyan College in 1976. He now resides in Athens, TN.

Remember When

UI Physics and Astronomy faculty and staff in the 1950s. Back-front, left-right: K. Anderson, ?, F. Coester, J. Eldridge, ?, E. Nelson, S. Bashkin, F. Rohrlick, ?, F. McDonald; J. Jauch, E. Ray, J. Van Allen, E. Tyndall, J. Jacobs. Do you recognize the faculty or staff not identified here? If so, please contact us so we may fill in the blanks for the departmental archives.

DEPARTMENTAL HISTORY

In 1874, an observatory with the first 5” telescope west of the Mississippi River was built at the north end of Clinton Street, where the UI President’s house now stands. The telescope was later moved to several locations throughout campus with its final move taking place in 1972 to Van Allen Hall. The telescope remained in service for research and student use until August 1995.
Undergraduates
Receiving Degrees

July 1999
Jacqueline Coyne,
B.S. Physics

May 2000
Derek Andre,
B.S. Physics & Mathematics
Christopher Anson,
B.S. Physics and Astronomy
Louis Datillo,
B.S. Physics & Mathematics
Sarah Klemuk,
B.S. Physics
Randall McEntaffer,
B.S. Physics and Astronomy
Tracie Michlin,
B.S. Physics
Christina Othon,
B.S. Physics and Astronomy
William Peterson,
B.S. Physics, Astronomy, and Mathematics

Graduate Students
Receiving Degrees

July 1999
Bennett Brown,
M.S. Condensed Matter/Laser Physics
Allen Rogel,
M.S. Astronomy
(Ph.D. Program, Indiana University)
Jonathon Olesberg,
Ph.D. Condensed Matter/Laser Physics
(Postdoc, U. of Iowa)

December 1999
Ethan Larson,
M.S. Astrophysics
John Dorelli,
Ph.D. Space Physics
(Postdoc Res. Assoc., Los Alamos Nat’l. Laboratory)
Salvatore Mancuso,
Ph.D. Astrophysics
(Postdoc Assoc., Harvard Smithsonian Center for Astrophysics)
Dmitry Samsonov,
Ph.D. Plasma Physics
(Postdoc, Max Planck Institute, Germany)

2000-01 Student Enrollment
For the academic year 2000-2001, the total number of undergraduate students is 87. This fall the Department will have 14 incoming graduate students bringing the total to 53 for the M.S. and Ph.D. programs.

Departmental Student Awards
The following exceptional students were recognized in 1999-2000: Distinguished Service Award—Carrie McGivern; Myrtle K. Maier Scholarship—Anna Tauke; William R. Savage Memorial Award—Joseph Evans; Waldo Edward and Martha Althaus Smith Award—Antonio Boveia; James A. Van Allen Award—Benjamin Moehlmann; Goertz/Nicholson Memorial Scholarship—Salvatore Mancuso; John and Stacey Wahl Scholarships—Suat Ozkorucuklu, Xuejun Cao. Congratulations on a job well done.

Student Accomplishments
This spring Anna Tauke was selected by the National Science Foundation as one of ten U.S. undergraduate physics students to spend the summer at the European Laboratory for Particle Physics (CERN) in Geneva, Switzerland. Anna, a junior from Dubuque, is working toward an electrical and computer engineering degree as well as her physics degree. She is also a UI Presidential Scholar, Undergraduate Scholar Assistant, and member of the UI Honors Program and Hawkeye Marching Band.

Suat Ozkorucuklu has won the second prize of the George Michail Memorial Poster Award at New Perspectives 2000, the graduate students’ conference at Fermi National Laboratory in Batavia, IL.

Jason Hiner was selected by the UI Council on Teaching for the University’s Outstanding Teaching Assistant Award for his excellence in teaching. The award carries a $1,000 prize.

Jon Olesberg received a Graduate Deans Distinguished Dissertation Award for 2000. The award is made when a dissertation stands well above other nominations for the Spriestersbach Prize. The award carries a prize of $500.

Student Anna Tauke with faculty advisor Prof. Yasar Onel.

Staff Changes
Over the past year, many changes have taken place in the Department, including changes in staff. Bruce Randall (Associate Research Scientist) and Kent Ackerson (Research Scientist) retired this year. Mary Fox (Senior Accountant) resigned her position after more than 25 years of service to the Department. Nural Akchurin (Research Scientist) has taken a faculty position in the Physics Department at Texas Tech University. Katie Schaub (Student Records Clerk) has taken a position at the Admissions Visitor Center to coordinate tours for all prospective students interested in attending The University of Iowa. Ramon Torres-Isea (Lab Coordinator) has taken a position as Advanced Lab Coordinator in the Physics Department at the University of Michigan.

New staff members include Debbie Foreman, Andrea Kapler, and Ron Vogel. Debbie is the new Students Record Clerk for the Department.

She came from the Graduate College and has a great deal of experience in assisting graduate students.

Andrea is the department’s Financial Analyst. She began work as a student accountant in the Department in 1986 and also worked as assistant to the grant/contract manager for Prof. Frank. She then moved to University Hospitals as a Financial Analyst for several years and most recently came back to the Department to work with Prof. Frank’s group as their grant/contract manager.

Ron is the new lab coordinator. Ron has taught at both Northern Illinois University and The University of Iowa. While in the College of Engineering, Ron coordinated labs for upper-class engineering majors. Most recently he has been working as a consultant for medical instrument companies, where he was designing and improving sensors and instruments. He has a number of publications and patents.
What’s New

New Scholarships Established

This year several new scholarships have been established—the Charles Wert Scholarship, the Henry Swift Scholarship, and the Nicholson Award.

Charles Wert Scholarship—Charles Wert, a 1943 MS and 1948 PhD graduate of The University of Iowa, is a leading figure in the field of materials physics. Last year Charles visited the Department, meeting with several students and faculty. He established a new scholarship that will help fund undergraduate research and professional travel.

Henry Swift Scholarship—Henry Swift is a 1941 MS and 1943 PhD graduate from the Department of Physics and Astronomy. Henry now lives in Albuquerque. His unrestricted gift of $20,000 is being used to fund a new scholarship.

The Nicholson Award—Established by two students of Dwight Nicholson, Mei-Mei Shen and Gordon Guozheng Sun, the Nicholson Award acknowledges Dwight’s commitment to helping new graduate students. This $1,000 scholarship is given to an entering graduate student. Mei-Mei Shen and Guozheng Sun are working with Prof. Gerald Payne in setting up a permanent fund to support the award. Mei-Mei and Guozheng plan to contribute additional funds over the next three to five years to endow the award. Anyone who wants to support this award is welcome to contribute.

For information about contributing to the fund, contact Robin Paterson at 319-335-1688 or send an e-mail to robin-paterson@uiowa.edu.

QuarkNet2000

The QuarkNet program has completed the second year of its two-year program. QuarkNet is an innovative program funded by the National Science Foundation in an effort to involve high school physics teachers in leading-edge particle physics research and introduces them to new ideas in particle physics that can be integrated into high school physics classes. This year the program brought together seven high school physics teachers from across the state of Iowa for a three-week workshop in June. This summer’s participants included: Kristin Duning (Marion High School), Jim Grife (Mitchellville), Brian Howes (Hempstead High School), Greg Nelson (Ames), Bob Veselis (Cal High School), Peter Bruecken (QuarkNet lead teacher, Bettendorf High School), and Jeff Dilks (QuarkNet lead teacher, Ames High School), Nural Akchurin (UI Research Scientist) and John Hauptman (Iowa State University Professor) were program mentors. Jeff Dilks and Peter Bruecken also actively participated in The University of Iowa’s elementary particle physics group’s research with the Compact Muon Solenoid (CMS) experiment. Overall, participants were very pleased with the workshop … “The way the group worked together and lead teachers helped us was fantastic” … “I am definitely going to integrate some of the new material into my curriculum” … “A great learning experience.” To learn more about the QuarkNet program, check out the web site at http://www.cerncourier.com/main/article/40/1/18.

Commons Renovation

One highlight of the year is our newly redecorated commons room. A paint job, new furnishings, and framed posters depicting major advances in physics for the past century make the room inviting for students, faculty, and staff. It has two computers for students to check their email, lockers for undergraduates to park their coats and books, a small physics library that works on the honor system, and a kitchen.

The room is well used by our students, who find it a comfortable place to relax between classes, do homework, eat, and socialize with faculty, staff, and other students. Use has increased significantly since the project was completed. Having this space contributes to building a sense of community among all members of the Department and will also benefit our recruiting efforts. We are grateful to all of our friends whose gifts helped fund this new look.

Students take time out to study and relax in the newly remodeled commons room.

Graduate Students Receiving Degrees (continued)

May 2000

Xuejun Cao,
M.S. Physics
(Ph.D. program, U. of Iowa)

Jim Holmes,
M.S. Physics

Thomas Allen,
Ph.D. Physics
(Postdoc. U. of Iowa)

Qingzheng Luo,
Ph.D. Physics
(Sr. Technical Staffer, CADENCE Design Systems)

Stephen Niemann,
Ph.D. Physics

Liberal Arts Staff Recognition

The UI College of Liberal Arts began an annual staff recognition reception this spring honoring individuals in the College who have shown extraordinary dedication to its academic mission. Those in the physics and astronomy department who have worked in the College of Liberal Arts for ten years or more included:

10 + years

Scott Allendorf, Rae Dvorsky, Larry Granroth, Jean Hospodarsky, Sharon Kutcher, Joseph Loria, Michael Miller, Michael Mitchell, Robert Nepp, Robin Paterson, Ann Persoon, Jolene Pickett, James Sartain, John Sigwarth, Dale Stille

20 + years

Terrance Averkamp, Robert Barrie, Joyce Chriseinger, Michael Fountain, Steven Hauser, Richard Huff, Donald Kirchner, Kathy Kurth, William Kurth, James Phillips, Gregory Pickett, William Robison

30 + years

Roger Anderson, Robert Brechwald, Eugene Howard, Larry Schroeder
ALUMNI UPDATE FORM

We want to hear from you! We’re updating our mailing list and need your input for alumni news for future newsletters and posting on the Physics and Astronomy website. Please fill out the form below and return to Cheryl Reardon, Dept. of Physics and Astronomy, 211 Van Allen Hall, University of Iowa, Iowa City, IA 52242-1479, or send an email to cheryl-reardon@uiowa.edu.

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
Department of Physics and Astronomy

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