

# Physics Newsletter

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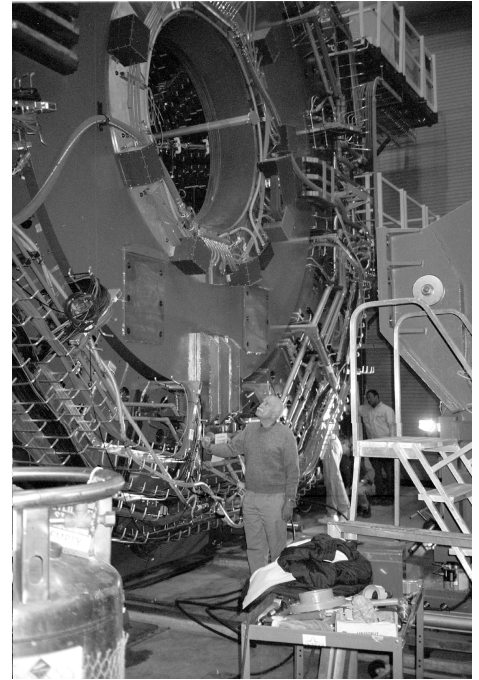


CREIGHTON  
UNIVERSITY

## High-Energy Physics Group Goes to Brookhaven

Faculty involved in high energy physics are **Dr. Michael E. Cherney**, **Fr. Thomas S. McShane**, and **Dr. Janet E. Seger**. About 10 undergraduate and graduate students are active in this research group, which is involved with the Star Detector of the Superconducting Collider under construction at Brookhaven National Laboratory on Long Island. Over the spring break, physics students **Jo Conrad**, **Steve Gronstal**, **Michele Lee**, **Sarah Stapleton**, and **Dave Wanner**, accom-

panied by **Fr. McShane** and **Dr. Seger**, traveled by van to Brookhaven and spent the week at the laboratory doing research and attending a class taught by **Dr. Cherney**. Junior physics majors **Dylan Thein** and **Timothy Huyck** and Chinese Graduate Fellow **Jie (Archer) Lin** are spending the entire spring semester at Brookhaven working on the Slow Controls for the STAR Experiment. The research and travel of this group is funded by a Department of Energy Grant applied for and administered by **Dr. Cherney**.



*Fr. McShane views the Star Detector.*

## Atomic Physics, Lasers, Sprites Are the Latest in Our Research

**Atomic Physics:** **Dr. Sam J. Cipolla** has been working with Graduate Fellow **M. Kevin Welsh** on inner shell ionization from ion-atom collisions, using low-energy positive ion accelerators at Creighton and the University of Nebraska at Lincoln. Kevin gave a talk on his research in November, 1998 at the 15th International Conference on the Application of Accelerators in Research and Industry at the University of North Texas in Denton. **Dr. Cipolla** gave an invited talk at the same meeting. **Dr. Cipolla** continues to spend Thursdays on research at the University of Nebraska at Lincoln.

**Research on Sprites:** The sprite research of Teaching Fellow **Robert J. Strabley** is done under the joint direc-

tion of **Dr. Janet E. Seger** and **Dr. Dean A. Morss** of the Department of Atmospheric Sciences. Sprites are recently discovered faint high-altitude optical phenomena whose origin is still uncertain. At the invitation of **Dr. Morris J. Pongratz** (Creighton B.S. '62), whose career has been with NASA, Bob spent the summer of 1998 with Morrie at Los Alamos National Laboratory in New Mexico and frequently discussed sprites with him. Bob gave a talk on Jan. 6, 1999, at the National Radio Science Meeting in Boulder, Colo., on a jet/sprite event that was possibly triggered by a meteor.

**Laser Physics:** **Dr. Thomas H. Zepf** has been building up our facilities for laser research by faculty and

## Dr. Loucks Gets Teaching Award

In connection with Founder's Week, Feb. 8-12, the Leadership Society Omicron Delta Kappa and the Jesuit Honor Society Alpha Sigma Nu collaborated on the "Teaching for Tomorrow" Award. Students submitted written nominations of faculty and staff who "went beyond the call of duty, ex-

emplified Jesuit ideals in the classroom, and showed classroom innovation. The fifteen top nominees included **Dr. Roger J. Loucks**, **Dr. Janet E. Seger**, and **Dr. Thomas H. Zepf** of the Department of Physics. **Dr. Loucks** was chosen as one of two award recipients.

students. Physics majors **Alicia Dwyer**, **Gregory Kubicek**, and **Jennifer Seby** spent the summer of 1998 at the National Institute of Standards and Technology (NIST) in Gaithersburg, Maryland on a Department of Commerce Grant applied for and administered by **Dr. Zepf**. Each of these students gave talks on their summer research at the Centennial APS Meeting January 22 - 26, 1999, in Atlanta, Georgia. Physics majors **Jmi** (pronounced Jamie) **Bassett** from Hawaii and **Gregory Kubicek** will be doing similar grant-supported research at NIST during the summer of 1999.

**History of Modern Physics:** **Dr. Robert E. Kennedy** is doing research on the revolution from classical to modern physics, with an emphasis on relativity. Working with him are teaching fellows **Hakan Armagan** and **Paul Nienkamp**.



## Department Migrates to Griswold Retreat Center

The physics department effectively migrated to the wooded Creighton University Retreat Center at Griswold, Iowa on Thursday evening January 27 and Friday January 28 for the fifth annual Physics Retreat.

With **Dr. Michael G. Cherney** as chief coordinator, the department, including faculty, staff, and students met over several months with **Fr. Larry Gillick, S.J.** of the Deglman Spirituality Center to plan this spiritual and social event. In order to give faculty and students a chance to get better acquainted, it was decided to have participants spend Thursday overnight at the retreat center. The theme of the retreat was prejudice in its various forms. As a primer for the Friday discussion on prejudice, the 1980 Paramount movie *The Elephant Man*, dealing with the triumph of human dignity over ignorance, hatred, prejudice, and fear, was shown Thursday evening. The movie deals with the life of Joseph Carey Merrick, a bright and sensitive young man badly deformed by what seems to have been the recently-identified Proteus Syndrome. He was born at Leicester, England in 1862 and died in London at age 27.

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Friday morning, after Mass celebrated by **Fr. Tom McShane, S.J.**, participants met in small groups to discuss their reactions to the movie and comment on their own experiences of prejudice. Highlights at a meeting of the whole group were talks by **Dr. Janet E. Seger** and Graduate Fellow **Hakan Armagan**. Dr. Seger talked about the gender-based difficulties faced by women scientists. Mr. Armagan described sparks generated by the friction between his Turkish and Moslem background and a Bible Belt

culture that he encountered while living in the South. His masterful mimicking of the twang of a hash-house client who criticized his foreign name and his English pronunciation was worthy of Yakov Smirnoff.

The final hours of the retreat were devoted to student reactions to interviews the previous week with three applicants for a tenure-track faculty position. The students were pleased that their opinions were solicited. As intended, our retreat enhanced mutual respect and understanding.

## Astronaut Maj. Anderson Visits Creighton Twice After Flight



*Maj. Anderson visits alma mater.*

*Physics Newsletter Three* reported the launch on January 22, 1998, of the Space Shuttle Endeavour which had **Major Michael P. Anderson**, a Creighton physics master's graduate in 1990, as one of the seven-member crew.

Major Anderson made an informal visit to Creighton on June 5. On this visit he met with Creighton students and with minority students at the new Jesuit Middle School of Omaha located at 2311 N. 22nd Street. He made a second visit on September 14 with his master's degree research advisor, **Fr. Thomas McShane, S.J.** of the physics department as his special host.

At this time he received the Graduate School Alumni Merit Award and presented to the university a Creighton pennant and a spectroscope from the Creighton Observatory which he had carried into orbit. He also gave a public lecture on the space program.

# New Graduates Join Physics Alum Rolls

November brought the first snow of the season and that was a reminder to get moving on *Physics Newsletter Four*. Since *Newsletter Three* a year ago, we have had eight new physics bachelor's degree recipients and two new master's degree recipients to welcome to the family of Creighton physics graduates.

Our new bachelor's graduates and their current positions are **Kurt M. Barry** from Irwin, Iowa, a salesperson

at Nebraska Furniture Mart in Omaha; **Tammy Castine** from Chazy, N.Y., a graduate student in entomology at the University of Nebraska at Lincoln; **Matthew J. Cianciolo** from Omaha, a Graduate Teaching Fellow in Physics at Creighton; **Raed M. (Rod) Jamil** from Lebanon, a Graduate Teaching Fellow in Physics at the University of Nebraska at Lincoln; **Andre Kemmling** from Volklingen, Germany, a medical student at the University of

Heidelberg; **Aaron LacKamp** from St. Joseph, Mo., applying to medical school; **Mike R. Lopez** from El Toro, Calif., a graduate student on a Fellowship in Nuclear Engineering at the University of Michigan at Ann Arbor; and **Patrick McMahon** from Central City, Neb., a graduate student on a Fellowship in Nuclear Engineering at the University of Wisconsin at Madison.

Our new master's graduates are **Matthew J. Szymczak** and **Quinn M. Jones**, both from Omaha. Matt has a position as a pricing programmer at National Indemnity, where **John E. Stahl** (M.S. 12/20/97) is also employed. Quinn is a software development engineer at Data Transmission Network (DTN).

For the second time in this decade two of our graduating seniors are husband and wife. This year's married couple is **Tammy Castine** and **Rod Jamil**. Also married are our 1992 bachelor's graduates **Tammy Oleskevich** and **Chris Wichman**. Chris is a nuclear engineer in the U.S. Navy and Tammy is a physician. Chris and Tammy live in Fredericksburg, Va.

## Success in Science Initiative Deadline Near; 25 Pct. Short

A few years ago, the Dean of the College of Arts and Sciences, the **Reverend Michael Proterra, S.J.**, informed the Board of Directors of the need for increased and long-term financial support for the laboratories in biology, chemistry, and physics.

These laboratories have costly needs in the acquisition, maintenance, replacement, and updating of scientific equipment. Over the past nine years there has been a 77% increase in enrollments in these departments without corresponding budget increases. As a consequence, these departments are severely taxed to maintain the recognized quality of Creighton's science programs.

The Dean's presentation resulted

in "The Success in Science Initiative." This plan calls for creating a catch-up fund of \$600,000 for immediate laboratory needs and a perpetual endowment of \$1,300,000 with annual income to be used for on-going laboratory needs.

In May 1998, the Kresge Foundation awarded Creighton a Challenge Grant to enhance science laboratories. Creighton received half of \$400,000, with the remaining half to be provided if Creighton succeeds in collecting \$2,000,000 by July 1, 1999. The Development Office has received 75% of this by contacting possible donors, including faculty, staff, parents, alumni, and friends of Creighton.

## 2 Grads Die

We have learned of the death of two Creighton physics bachelor's graduates, **Craig M. Campbell** (B.S.PHY 1969) and **James E. Kelaher, M.D.** (B.S.PHY 1991).

**Craig** received a master's degree in electrical engineering from the University of Nevada at Las Vegas. He had been a pilot in Viet Nam and was employed in Nevada on special testing projects. He died after a prolonged illness in Las Vegas on Aug. 12, 1998. He is survived by his wife Geri and two children.



*Kelaher*

**James** received an M.D. degree from Creighton University in 1995 and had been a medical resident in the Baylor College of Medicine in Houston, Texas. He died in a boating accident on February 3, 1998. We have no information about survivors from his immediate family.

## Blotcky Endowment Set Up

On January 18, 1999, **Mrs. Wanda J. Blotcky** set up an endowment fund in memory of her husband, **Alan J. Blotcky**. Al was the second person to receive our Physics M.S. degree (Dec. 21, 1971).

He was the supervisor of the nuclear reactor facility at the Veterans' Administration Hospital in Omaha during most of his professional life. Alan died of cancer on January 1, 1997. The principal of the fund was given as a perpetual endowment;



*Blotcky*

the income from the fund will be used to support the Creighton University Department of Physics. We are grateful for this generous gift, which will enhance the academic mission of the Department of Physics for the indefinite future.

Two previous funds that continue to benefit the Department of Physics are the Cullen Fund set up by the estate of **Nora A. Cullen** of Omaha in 1981 and the Fuchs Fund, set up in the will of **Eugene B. Fuchs, Jr.**, who received a B.S. physics degree from Creighton on May 30, 1970. Gene was a high school physics teacher in St. Louis, Mo., who died on July 16, 1995.

## Faculty Changes in the Department

Continuing full-time faculty and their starting dates at Creighton are: **Clarence M. Wagener, S.J.** (1959); **Thomas H. Zepf** (1962); **Thomas S. McShane, S.J.** (1963); **Robert E. Kennedy** (1966); **Sam J. Cipolla** (1969); **Michael G. Cherney** (1989); and **Janet E. Seger** (1991).

Continuing part-time faculty are **David J. Kriegler** (1984), who teaches astronomy, and **David R. Stuva** (1994), who teaches the night section of general physics.

Full-time staff are **Bonnie J. Kelley** (1975), Department Secretary; **Robert F. Stoffel** (1968), Laboratory Manager, and **Bradley D. Walters** (1991), Research Technician.

**Dr. Alan J. DeWeerd**, a visiting professor for two years, was a member of the Laser Physics and High Energy Research Groups and maintained the physics web page <<http://www.creighton.edu/Physics/>>. He has taken a tenure-track position in the

### Dr. Nichols Joins Physics Department

Over a period of several months, under the able and tireless leadership of **Dr. Seger**, the department studied the files of over 100 applicants for an open physics faculty position.

Qualities looked for were a commitment to teaching and to the Jesuit mission of Creighton University, and the ability to involve graduate and undergraduate physics students in research. Preferred areas of expertise were quantum optics, solid state physics, and physics in medicine. About ten promising applicants were interviewed in conference phone calls and three were invited for visits to the campus for personal interviews.

A job offer has been accepted by **Dr. Michael G. Nichols**. He has been in an NIH postdoctoral program at Cornell University since receiving a Ph.D. in physics from the University of Rochester in 1996. He uses lasers in biophysical applications. He will be developing a biophysical optics laboratory equipped to investigate biological chromophores. We anticipate that his presence will foster interactions between the Department of Physics and the College of Medicine.

Department of Physics at the University of Redlands, Redlands, Calif. For the 1998-1999 academic year, we have two visiting professors, **Dr. Tyler C. Gruber** and **Dr. Roger J. Loucks**.

**Dr. Gruber**, from Huntington, WV, received a Ph.D. in physics from Texas Christian University in 1994. From 1994-1998 he worked for Columbian Chemicals Company at Monroe, LA in electron microscopy and carbon black research. His current research interests are in computational studies of symmetry and anisotropy in fine particulate materials.

At Creighton, he is teaching Introduction to physics, general physics and solid state physics. He and his wife Robyn have two small children, a daughter Hannah and a son James. So far, Dr. Gruber has not been observed plying his hobbies—playing the trom-

bone and singing—in his office.

**Dr. Loucks**, from Avoca in the Finger Lakes region of upstate New York, received a Ph.D. in theoretical nuclear physics from the University of Illinois at Urbana-Champaign in 1996. He taught for two years at Francis Marion University in Florence, SC.

At Creighton, he is teaching general physics, mechanics, thermodynamics, and electrodynamics. He is collaborating with colleagues at Monmouth College and at Argonne National Laboratory in research on photo vector meson production and is working on a nuclear physics text. Since his hobbies include translating Latin and Greek, it is somewhat less surprising that he is taking a course in Vergil's "Aeneid" from **Fr. Greg Carlson, S.J.**, Department of Classics and Near Eastern Studies.

## Alums Return for Visits

It is always a special occasion when former students stop in to say hello.

We were happy to welcome and surprised to recognize a B.S. grad from way back in June 1962. **Gene Meysenberg** stopped in on May 26, 1998, with brother-in-law **Dan Offenburger**, (former Creighton Director of Athletics) from Shenandoah, Iowa. Gene is a Systems Engineering Manager with Electronic Data Systems in Dallas, Texas.

**Russell Anania** (B.S. '65) lives in Omaha and occasionally attends our physics seminars. He has a Ph.D. degree in theoretical physics from the University of Nebraska at Lincoln and is doing research on fundamental theoretical physics.

Another early grad who visited Creighton February 12-14 was **Dan Mihelich** (B.S. June 1967). Dan is an assistant professor in the MBA program in the School for Professional Studies of Regis University in Denver. He specializes in system analysis and design, and teaches both in Colorado Springs, where he lives, and in Denver, Colo.

**Ron Bruno** (B.S.PHY '70; M.S.'73) visited Omaha on April 14, 1998, for a funeral. He is Vice-President of Exitech in Knoxville, Tenn.

**Dale A. Whittaker** (B.S.PHY. '74) stopped in during a visit with relatives in Council Bluffs. He is a reliability engineer with Lucas Nova Sensor and lives in Antioch, Calif.

Other physics visitors graduated more recently. **Charles (Chuck) Smith** (B.S. '89, M.S. '91) stopped in during fall break in October while his young daughters were splashing in the Creighton pool. He has been certified by the American College of Radiology as a medical physicist. Chuck moved to Omaha with his family from New York, where he was attending Columbia University, to work on a Ph.D. program in medical radiation physics at UNMC (University of Nebraska Medical Center). He is scheduled to receive his Ph.D. degree at the end of the spring semester and has accepted a fall position at the Northwestern College of Medicine in Chicago as a teacher and researcher in radiation oncology.

**Randy Blessing** (M.S. '94) visited recently while his sister viewed the campus. He teaches physics at Morningside College in Sioux City, IA.—**Peter Colarco** (M.S. '97) stopped in on January 11. Pete is in a Ph.D. program in Atmospheric Sciences at the University of Colorado in Boulder.