



## Creighton Physics Club Celebrates 50th Anniversary

**H**istory: Just over 50 years ago, in the fall of 1962, 13 students met to draft bylaws for what was to become the Creighton University Physics Club. The charter members were: **Richard J. Brinks, Robert E. Chaney, Jr., Bernard G. Corrigan, Carl R. Distafano, Joseph F. Fennell, Jerry P. Hart, Richard E. Keating, Timothy J. Novotny, Richard W. Ott, Morris B. Pongratz, Gerald T. Schneider, Gerald L. Strohmeier, and Clifford J. Sturek.** The faculty moderator was **Thomas H. Zepf**, an assistant professor of physics in his first year at Creighton. He had suggested the club and guided its formation. By the end of the 1962-1963 academic year, membership had grown to 30 students.

The goals of the Physics Club, as stated in the original bylaws, were to promote interest, understanding and activity in physics. Members were encouraged to do original research and to give talks on topics of current interest.

On April 22, 1968, the Physics Club became a charter chapter of the **Society of Physics Students**, an American Institute of Physics replacement for its former *Student Section* organization of which our Physics Club was a member.

In 1982 the necessary steps were taken by Dr. Tom Zepf, then the physics chairman, to establish a Creighton University Chapter of **Sigma Pi Sigma**, the National Physics Honor Society. An installation ceremony on December 5 saw the induction of 15 members who met the eligibility standards.

**A**ctivities: During its first year, in May of 1963, the Physics Club joined with the Math Club to run a Field Day and Open House for Omaha-area high school students. Its purpose was to encourage local high school students to take a deeper interest in math and physics and to promote future study at Creighton University. This effort evolved into an annual event that continues to this day, hosted by the Creighton University Society of Physics Students (SPS) and known as **The Physics Field Day for High School Students**. Nebraska and Iowa high school students come to compete in contests involving the basic concepts of physics they are learning about in their classes.

(Continued on Page 3)



Members of the 1962-1963 Physics Club who were present for this photo from the 1963 Bluejay yearbook: Back row: B. Chaney, G. Schneider, secretary; R. Keating, president; P. Foran, C. Maggiore. Middle row: R. Curran, C. Sturek, publicity chair; G. Strohmeier, J. Fennell. Front row: M. Pongratz, vice president; R. Brinks, R. Ott, K. Maier.



Members of the 2012-2013 Physics Club who attended the 2013 Evening of Reflection: Back row: N. Horst, M. Lehnertz, C. Meyer, J. Rogers, M. Armbruster, W. Graft. Middle row: J. Bang, vice president; N. Holman, secretary; B. Schmachtenberger, E. Borchers, G. Batakin. Front row: R. Ford, A. Hagen, K. Bauer, K. Ward, president; D. Desa. Reclining: R. Gnabasik.

# Physics Club Reflects on the Past - Looks to the Future

During academic year 2012-2013, the Physics Club's 50th Anniversary was highlighted on several occasions.

The first of these was the **Physics Field Day** held on March 23. It had as one of its themes "The Last 50 Years." (See page 3.)

Then, at the **Physics Seminar** on April 26, we were honored to have a speaker who is one of the Physics Club's charter members, **Dr. Morris "Morrie" B. Pongratz**. You can see Morrie as a Creighton student in the 1963 group photo on page 1. After graduating with majors in physics, math, philosophy and theology at Creighton, and a Ph.D. in physics at the University of Maryland, Morrie has enjoyed a long and productive career at the Los Alamos National Laboratory. In an inspiring and informative presentation, Morrie described a wide range of national



Student officers and faculty moderators from the 1st and the 50th years of the Physics Club: Officers Kristina Ward and Morrie Pongratz, center, are flanked by moderators Tom Zepf and Patricia Soto.

Photo by Kara Haase



Faculty moderators spanning the 50 years of the Physics Club: Drs. Tom Zepf, Mike Nichols, Janet Seger, Jack Gabel, Gintaras Duda, Patricia Soto, and at far right, Tom McShane, S.J.

security-related research projects in which he has played major roles. See more about Morrie's life on page 10.

Two days later, on April 28, our annual **Evening of Reflection** was held at the home of **Dr. Jack Gabel** and his wife **Pam**. Each year we gather at a faculty member's home to celebrate student accomplishments, induct new members into **Sigma Pi Sigma**, the physics honor society, and hear reflections from graduating students. The event is emceed by the Physics Club moderator who currently is **Dr. Patricia Soto**. Highlights of physics department activities of the past year were reviewed by **Dr. Janet Seger**, the physics chair. Dr. Seger also remembered **Dr. Robert Kennedy** who was an avid supporter of the Evening of Reflection. Joining us for the evening were **Dr. Pongratz** and his son, **Dan**. Dan followed his father's lead by majoring in physics at Creighton (BSPhy'96).

**Dr. Pongratz** spoke to the students, counseling them to pursue a well-rounded life devoted to family, God, community, and vocation. Next, the student awards were announced, and the students responded with faculty awards. "A Special Recognition Award" was presented to **Tom Zepf** - "For his dedication to forging the Physics Club." Dr. Zepf thanked everyone for their thoughtfulness. He noted that **Fr. McShane** played a major role in the early success of the Physics Club as well. Following student reflections and a photo-session that captured pictures seen here and on other pages, a buffet supper was enjoyed by all.

The Club's 50th Anniversary celebration is set to reach a climax with the creation of a **Time Capsule** suggested by Dr. Soto. A large chest filled with items contributed by students, faculty and staff will remain sealed for 50 years, not to be opened until 2063!

-THZ

## Inductees into Sigma Pi Sigma During Its 30th Year



Seen here are the inductees into the Creighton Chapter of Sigma Pi Sigma, the National Physics Honor Society, during its 30th year: Dr. Jonathan Wurbel, Nathan Horst, Jason Rogers, John Otto, Chris Lefky, Christian Meyer, Dan McGinnis, and Dr. Andrew Baruth.

Photo by Tom Zepf

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# Members Participate in Year-Round Activities



Titus Alston, BS'66, is seen here in May 1963 using microwaves to demonstrate Young's double slit experiment to a high school student at our first Physics Open House.

Photos by Tom Zepf



Nathan Horst, Kristina Ward, and Danielle Desa are seen here in the Rigge Lecture Auditorium as they begin to demonstrate conservation of angular momentum in the Demo Show at the March 2013 Physics Field Day for High School Students.

(Continued from Page 1)

Events such as quiz bowl, rocket building, circuit wiring, optical slalom, and many more, make for a fun-filled day. The theme of the 2013 **Physics Field Day** was "The Space Race," with a secondary theme of "The Last 50 Years" to

honor the 50th Anniversary of the Physics Club. An added feature was a **Demo Show** put on by club members. The development and implementation of the Show was funded by an award to the Physics Club from Sigma Pi Sigma.

In addition to the Physics Field Day, there are many other activi-

ties run by the Society of Physics Students. One of these, **Physnic**, is a picnic in the fall semester where physics faculty, staff, graduate and undergraduate students get to know each other in a social setting.

Another event where the SPS plays an important role in its planning and execution is the **Physics Retreat**, held annually in the spring semester at the Creighton Retreat Center in Griswold, Iowa, or at some other off-campus location. The Physics Club helps to decide the theme and discussion topics, and it plans the meals and logistics.

A major project for the club during the Halloween Season is the **Haunted Physics Lab**. Beware and be spooked as a physics lab is transformed into a maze demonstrating principles and applications of physics set to a haunting theme. See the story about the Haunted Physics Lab on page 8.

Also the SPS strives to do one day of **community service** each semester. A recent fall service project was raking up leaves for those unable to do it themselves. In the spring semester the club traditionally spends a day working on a local project in the Habitat for Humanity program. *-THZ*

Jarrod Bang, front right, and Christian Meyer are working the grills to supply burgers and brats to the students, staff, faculty and their families relaxing at the September 2012 Physnic in Omaha's Elmwood Park.



Photo by Tom Zepf

Larry Gillick, S.J., Director of the Deglman Center for Ignatian Spirituality, is seen here at the January 2013 Physics Retreat as he reflects on the inspiring life of Dr. Bob Kennedy, recently deceased faculty member who enjoyed and nurtured our physics department retreats.



Photo by Tom Zepf

# Physics Professor Robert E. Kennedy Dies at 73

## A Remembrance by Tom Zepf

It is with much sadness that we report the passing of our dear friend and physics department colleague, Robert E. Kennedy, Ph.D., who died on November 30, 2012, at the age of 73, following a 10-month battle with melanoma.

Bob was born in Santa Monica and raised in Anaheim, Calif. After receiving a bachelor's degree in physics at Loyola of Los Angeles in 1961, Bob married Mary Johnson and they moved to Notre Dame where he completed his Ph.D. in physics in 1966.

As the chairman of the physics department I invited Bob in 1966 to interview for a faculty position at Creighton. At that time the physics department was housed on the fourth floor of the Administration Building (now Creighton Hall). Although the space there was very limited, I was able to show Bob our plans for the Rigge Science Building. Ground-breaking had recently taken place and physics was poised to move into a much larger and better equipped space. (We moved in February 1968.) Bob assured me that he didn't need a research lab or start-up funds (there weren't any), just pencil and paper to do theoretical research. To allow more time for research, Bob was offered a reduced course load his first year.

Bob met with our Irish recruiting team: Thomas McShane, S.J., a member of the physics faculty; Thomas McKinney, S.J., dean of the College of Arts and Sciences; and Richard Harrington, S.J., the academic vice president.

After eventually accepting our offer, Bob spent the next 46 years at Creighton as a teacher, mentor, administrator and researcher in statistical mechanics and the history and philosophy of physics.

Bob was chair of the Physics Department from 1973 to 1981 and 1993 to 2006. Younger faculty especially appreciated his sage



**Robert E. Kennedy, Ph.D.**

guidance as a mentor. He was a true department chair, rather than a department head, delegating tasks and generally conducting business in a democratic fashion. A recent example was his engagement of every department member in planning the expansion of physics into Hixson-Lied and the remodeling of the old space in the Rigge Science Building.

Also as chair, Bob added student representation at our department meetings, creating an atmosphere of openness that is prevalent now but was innovative then.

Creighton's Jesuit mission was important to Bob. In 1995 he enthusiastically supported a sug-

gestion by Dr. Cherney to have a Physics Department Retreat. Bob pursued the idea with Fr. Gillick and the retreat is now an annual event. You can read about it on page 3. Also in 1995, Bob fully embraced a suggestion by Fr. Gillick to have what we now call an "Evening of Reflection" for our graduating physics majors. That too has become an annual event. There is a story about this year's celebration on page 2. Many of our alums will remember the Evening of Reflection they attended at the home of Bob and Mary Kennedy!

Bob became widely known on campus due to his extensive service on numerous College and University committees. There was hardly a committee on which he had not served at one time or another, often as the chairman or secretary. This contributed to his selection as president of the University Faculty for two terms, 1978-1979 and 1988-1990.

Over the years Bob received the University's Distinguished Faculty Service Award, the College Award for Professional Excellence, and the St. Ignatius Award for Service to Others.

In 2006 Bob was chosen by the University president to serve as interim dean of the College of Arts Sciences, which he did for two years while the search for a



Photo by Tom Zepf

**Bob and Mary Kennedy**

permanent dean was underway.

A retirement celebration for Bob was hosted by the College of Arts and Sciences and the Physics Department on April 8, 2008. In recognition of his exceptional service over many years, Bob was promoted from associate professor to professor emeritus and dean emeritus by John P. Schlegel, S.J., University President.

Bob officially retired in 2009 after a sabbatical leave. He continued to teach physics part time and finished a book he had been working on for many years stemming from his course on Albert Einstein: *A Student's Guide to Einstein's Major Papers*. The book was published in January of this year by Oxford University Press. A reviewer, Norbert Straumann, University of Zurich, praises the work. He refers to the book as "a true gift for students." He also recommends it to teachers as a guide to informing the next generation of the basic historical developments in physics, and concludes by saying: "As a student I would have studied such a guide to Einstein's major papers with devotion."

Bob and Mary were active in an informal Campus Ministry group. The December 6 Mass of Christian Burial for Bob at St. John's Church was enhanced by the participation of the group's members.

Before his death Bob was able to celebrate his 50th wedding anniversary with Mary, and enjoy quality time with his children, their spouses, and his grandchildren.

In addition to Mary, Bob is survived by sons and daughters-in-law: Robert E. Kennedy III; Christopher J. and Michelle Kennedy; Michael J. and Amy Kennedy; daughters and son-in-law Erin M. and Peter Shearer; Shannon Kennedy; seven grandchildren; brother John (Max) Kennedy; nieces and nephews.

Bob's son Christopher, BSPhy'86, is a Creighton physics graduate who followed in his father's footsteps by completing a Ph.D. in physics at Notre Dame.

## Remembrances from colleagues and alums

"Bob was someone who really loved Creighton and poured his energy into making it a better place. What I most appreciated about him was that he always took the time to listen to people, whether students, staff or faculty. I can't think of a time when I went to talk to him that he didn't act as if he had all the time in the world to hear me out."

—Janet Seger, Chair and Professor of Physics

"I will always remember (Bob's) respectful manner under even the most stressful situations."

—Rose Hill, Assistant Dean College of Arts and Sciences

"I was deeply saddened to learn of Dr. Kennedy's recent passing. He was a true mentor of mine and I was privileged to call him my advisor when I was an undergraduate at Creighton."

—Erin Underwood, D.O., Physics Major, BS'96

"Dr. Kennedy was a wonderful teacher and person. His problem-solving skills and overall calmness had a lasting and very positive influence on my own approach to problem solving. What he taught me has served me well in over 25 years at Boeing."

—Bob Manders Physics Major, BS'87



Physics students, faculty and staff at the Evening of Reflection hosted by Bob and Mary Kennedy at their home in April 2007. Bob is standing at far left.

Photo by Tom Zepf

"Who among us has not been seduced by that impish smile of Bob's, by that twinkle in his eye, as though some elf had just sprinkled him with pixie dust! That smile and that twinkle were never more evident than when he was trying to convince you of his point of view, or when he once again has defeated you in his favorite card game, aptly named "manipulation!"

from a "Bob Kennedy Tribute" at the Mass of Christian Burial

—Jack Angus, Emeritus Professor of Sociology

### The Robert E. Kennedy Award "For Outstanding Scholarship as a Physics Major"

was presented to Erin L. Borchers and Jarrod K. Bang at the 2013 Evening of Reflection.

"Dr. Kennedy really helped me grow as a person. I learned a lot from him; and he gave me freedom to explore what I was searching for. I would always be grateful to him for that. I'll miss him."

—Hakan Armagan Physics Major, MS'08

"One day, while I was in his office hopelessly negotiating for a few additional points on my last exam, I observed Dr. Kennedy remove a bottle of Pepsi from the freezer in the physics office. The cola was clearly in a liquid state. He then pried off the cap. The beverage immediately began to crystallize and turn into a slushy or semi-solid state. I was desperate to show that I had learned something after all in class. I asked, 'Is that phenomena reversible?' He

(Continued on Page 8)

# Alumni Family Continues to Grow... and Grow

Twenty-six physics majors graduated with a bachelor's or master's degree in 2011 and 2012. Many are continuing their studies leading to advanced degrees at various universities with financial support in the form of scholarships, fellowships or assistantships. Others entered law school, medical school or are employed in a variety of occupations. Graduates who minored in physics are not listed here.

## Bachelor's Degree Graduates - Class of 2011



### Top from left:

Anya K. Burkart, B.S.Phy\*  
5/14/11  
Eric J. Hauger, B.S.Phy\*  
5/14/11  
Clifford S. Hecht, B.S.Phy\*  
5/14/11  
Daniel J. McGinnis, B.S.Phy\*  
5/14/11

### Bottom from left:

Lonzale Ramsey, B.S.  
5/14/11  
Eric D. Svingen, B.S.  
5/14/11  
Tri D. Tran, B.S.Phy\*  
5/14/11  
Jorge A. Vergen, B.S.  
5/14/11

## Master's Degree Graduates - Class of 2011



### Left to right:

Katherine E. Garrett, M.S.\*  
12/17/11  
Robert P. Thomen, M.S.\*  
5/14/11  
Trevor J. Torpin, M.S.\*  
8/12/11  
Aruna Wanninayake, M.S.\*  
8/12/11  
Semere M. Woldemariam, M.S.\*  
5/14/11

## Physics Department Faculty 2012 - 2013



From left: Thomas H. Zepf, Ph.D., David L. Sidebottom, Ph.D., Andrew G. Baruth, Ph.D., Michael G. Nichols, Ph.D., Jonathan P. Wurbel, Ph.D., Janet E. Seger, Ph.D., Jack R. Gabel, Ph.D., Patricia Soto, Ph.D., Gintaras K. Duda, Ph.D., Thomas S. McShane, S.J., Kyle Watters, Ph.D., Sam J. Cipolla, Ph.D., and Michael G. Cherney, Ph.D.

Photo taken by Kara Haase during the 2013 Evening of Reflection at the home of Jack and Pam Gabel on April 28, 2013.

## Bachelor's Degree Graduates - Class of 2012



### Top from left:

Matthew A. Armbruster, B.S.Phy\*

5/12/12

David C. Austerberry, B.S.Phy\*

5/12/12

Gleb G. Batakin, B.S.Phy\*

5/12/12

Ross T. DeVol, B.S.Phy\*

5/12/12

### Bottom from left:

Jamison S. Duckworth, B.S.Phy

12/15/12

Alejandro J. Echeverri, B.S.Phy\*

8/10/12

Adam G. Hester, B.S.\*

5/12/12

Clyde A. Redger, B.S.Phy\*

5/12/12

Chase C. Webb, B.S.\*

5/12/12



## Master's Degree Graduates - Class of 2012



### Left to right:

Barbara L. Medvar, M.S.\*

5/12/12

James F. Ross, M.S.\*

5/12/12

Stanley E. Schnell, M.S.\*

5/12/12

Yuli Wang, M.S.\*

5/12/12

## Awards Received by 2011 and 2012 Physics Graduates

A partial listing of the awards received by physics students in the Graduating Classes of 2011 and 2012 may be found on page 12.

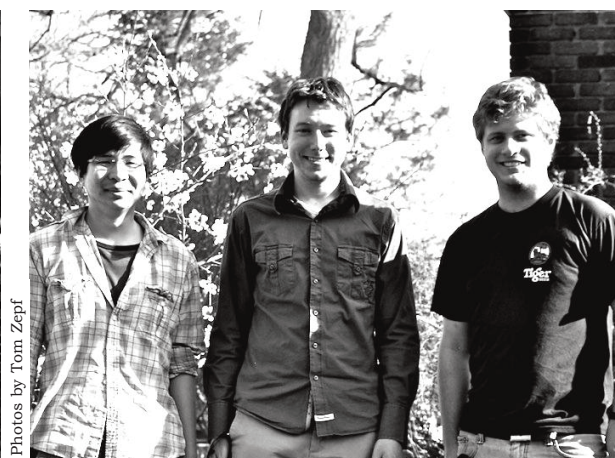
\*Indicates a member of the National Physics Honor Society, Sigma Pi Sigma.

## 2013 Bachelor's Degree Candidates



Some of the 2013 physics bachelors degree candidates are seen here at the Evening of Reflection. From left: Jarrod Bang, Nathan Holman, David Fuxa, Christian Meyer, Erin Borchers, Kristina Ward, John Otto.

## 2013 Master's Degree Candidates



Photos by Tom Zept

Some of the 2013 physics masters degree candidates are seen here at the Evening of Reflection. From left: Tri Tran, Eric Hauger, Dan McGinnis.

# THE HAUNTED PHYSICS LAB

(Continued from Page 5)

stated with that wry smile of his, 'I have conducted extensive research into this issue, involving years of repeated experiments, normally about mid-afternoon each day, and I can say with a high probability that, in fact, the crystals in the bottle will revert to a liquid state over time – unless I drink them first.' As I recall, he gave me two points on my exam for the interest I showed in his 'research project.' I often think of him when I see a Pepsi bottle, even to this day. Dr. Kennedy was a great inspiration to us all. He will be missed by those who knew him, and by those who will never have the chance to know him."

–Jack Clifford, J.D.  
Physics Major, BS'78

"In the course of a discussion I had with Dr. Kennedy one day, I learned a lesson that I have continued to use in my life. He said, 'It is just as important to learn the dead ends or the things that do not work in solving a problem as it is to know the solution.' For me, this significantly broadened my understanding and feeling of what success is. Many times this has given me the courage to take that first step in tackling a problem because I knew whether I found the solution or not, I was going to win either way."

–Randy Crow  
Physics Major, BPhys'70

"Due to his fascination with Einstein and statistics, I once revealed to Bob that his Irish heritage made him a boson. (Bosons are particles that obey Bose-Einstein statistics.) The proof is obvious for those who know about quantum statistics and Irish pubs: The more Irishmen there are in a pub, the more likely it is that another Irishman walking by will join in. Bob liked the analogy."

–Tom Zepf, Emeritus  
Professor of Physics

During the Halloween season our students and the public are treated to a haunted physics laboratory. Visitors have fun learning physics as they confront a maze of exhibits involving optical and electrical phenomena in a Halloween setting.

Inspiration for the Haunted



Photo by Tom Zepf

Physics major Nathan Horst is guarding the "Dept. Head" played by physics club president, Kristina Ward, seen here in a re-creation of the famous Sphinx Illusion.

Lab came over 30 years ago when Dr. Tom Zepf was teaching a course on light, color and lasers for non-science majors. Many of the student activities needed subdued lighting. When one of the class days fell on October 31, he thought it would be fun to decorate the darkened room and use Halloween as a theme for the day's activities. The students loved it and "The Haunted Physics Lab" was born. Over the intervening years many alums, while they were students, contributed to the

development of the Haunted Lab as it grew to become a popular Halloween event on campus. It consists now of 30 exhibits that teach physical principles, mostly in optics and electricity, all inviting interaction by the visitors.

Members of our Physics Club (The Society of Physics Students)

participate in setting up the lab. They also serve as "facilitators" by answering questions and pointing out subtleties that might be missed.

With its atmosphere of magic and mystery, the lab appeals to people of all ages and interests. In 2012 it had some 600 visitors, including students, faculty,

staff, children and grandchildren.

More details about the lab's philosophy and content are contained in an article written by Dr. Zepf, "The Haunted Physics Lab," that appeared in a 2004 issue of *The Physics Teacher* (Volume 42, pages 404-408). One of the journal's most downloaded articles, it has spawned many versions of the Haunted Physics Lab that are now being produced at universities, colleges and high schools all around this country and the world.

–THZ



L to R:  
Lana Zholudeva, treasurer;  
Jarrod Bang, vice president;  
Kristina Ward, president;  
Nathan Holman, secretary.

Officers of the 2012-2013 Creighton Society of Physics Students



# Meet the Newest Members of our Faculty Family

**A**ndrew G. Baruth, Ph.D., joined the faculty of Creighton University in the fall semester of 2012. Andrew grew up in Holland, Neb. He was very active in band, the Boy Scouts and worked as a radio DJ. Loving to know how things worked, he had an early interest in physics and engineering that never abated. Andrew's research interests include materials physics and STEM pedagogy. He received his B.S. in physics from Doane College where he worked to incorporate Flash-based simulation into the physics classroom. During his graduate studies at the University of Nebraska - Lincoln, he discovered the origin of the exchange interaction at the interface between magnetic thin films of nanometer thickness, which proved itself important to the magnetic recording industry. He did post-doctoral work at the University of Minnesota where he worked on the guided self-assembly of polymeric materials for nanolithographic applications, including the production of periodic nanomagnet arrays for ensemble studies and bit-patterned recording media. He has recently become very passionate about developing low cost, earth abundant, sulfide-based photovoltaic thin films for next generation solar cells, as well as becoming a strong advocate for bio-renewable energy and materials. Dr. Baruth teaches General Physics, Introduction

to Solar Energy, History and Technology in the Modern World, Introduction to Photovoltaic Materials, and Seminar in Engineering. He is married to Becky and they have a 5-year-old son Ryan. He enjoys music (listening and playing), running, frisbee golf and camping.



**Andrew and Becky with their son Ryan**

**J**onathan P. Wrubel, Ph.D., joined the faculty of Creighton University in the fall semester of 2012. Jonathan was born and raised in the Tampa Bay region of Florida, about a mile from the gulf-coast beaches. Since he was young he has always wanted to understand how things work, and he knew since high

school that he wanted to teach physics. He received his B.S. degrees in physics and in mathematics from the University of Florida in 1998. He studied condensed matter physics at Cornell University, receiving his Ph.D. in 2006. While at Cornell he met a fellow Catholic getting her master's degrees in international development and in economics. Jonathan and Lacey were married during the summer of 2006, the day before they moved to Europe so that Jonathan could begin a postdoc at CERN's antiproton decelerator facility. As a postdoc with Harvard University he helped to build an experiment which has since trapped neutral anti-hydrogen atoms for tens of seconds. While in Geneva, Jonathan and Lacey's son Julian was born. When Julian was just five weeks old, they moved to Gaithersburg, Md., where Jonathan began a National Research Council Postdoctoral Associateship to study spinor Bose-Einstein condensates at the National Institute of Standards and Technology. In 2011 their daughter Alina was born. At Creighton, in his first year Dr. Wrubel taught General Physics, Thermodynamics, and laboratories in Electronics and Optics. He enjoys spending time with his family, playing soccer, cycling, rock-climbing, and thinking about issues of science and faith.



**Lacey and Jonathan with their children Julian and Alina**

## Rocket Scientist lectures at Creighton

Here to help us celebrate the 50th Anniversary of our Physics Club was physics alum **Morris B. Pongratz**, Ph.D., BS'64, seen in the photo below at a seminar on April 26, 2013, where he spoke to students and faculty about "A Creighton Grad's Retrospective from Los Alamos."



Photo by Tom Zepf

**Morris "Morrie" Pongratz**

Morrie grew up on a farm in O'Neill, Neb. He was a charter member and the first vice president of the Physics Club when it was started in 1962-1963. In his senior year he was club president. (See articles on pages 1 and 2.) After graduating from Creighton (with majors in physics, math, philosophy and theology) and completing a Ph.D. in physics at the University of Maryland (where he met his wife Cheryl), Morrie enjoyed a long and productive career at the Los Alamos National Laboratory. In the physics seminar he described a wide range of national security-related research projects in which he has played major roles. He describes himself as a "rocket scientist" in which much of his work has involved "building, flying and monitoring sensors designed to ensure no one is testing nuclear weapons in the atmosphere or in space."

Morrie was also a guest at our annual Evening of Reflection where he spoke briefly to the students, counseling them to pursue

a well-rounded life devoted to family, God, community, and vocation. He has followed that advice in his own life. Two years ago Morrie was named a "Living Treasure of Los Alamos." With a focus on youth, Morrie has served on the County Council, the Board of Education, the United Way Youth Team, was twice named "Kiwanis Advisor of the Year," helped establish the Juvenile Justice Advisory Board, and is active in his church, the Immaculate Heart of Mary Catholic Church, where he is an Extraordinary Minister, served on the parish council, was religious education chair, started the Theology Journal Club, and is an adult core member of the Life Teen program. Morrie also organized the IHM team that wrote "Nuclear Weapons and Morality: A View from Los Alamos."

Morrie and Cheryl have two children, Karin and Dan, both graduates of Creighton University. Dan, BSPhy'96, followed his father's lead by majoring in physics. Both Karin and Dan continued their studies and are now lawyers.

Morrie says his upbringing working on farms taught him the strength of working together. In fact, he still returns to Nebraska to help his brother with the harvest each October. *-THZ*



*Morrie is seen here in his volunteer role as PA announcer for the Los Alamos High School "Toppers," proudly wearing his Hilltopper letter jacket inscribed "Voice of the Toppers."*

## News from ...

**Jesus A. Bilbao**, BSPhy'71, wrote to say hello following receipt of the last Physics Newsletter, congratulating Dr. Cipolla on his promotion to professor emeritus and sending greetings to Fr. McShane. Jesus also brought us up to date on what he is doing. After completing his master's degree at Arizona State, Jesus has been working in the oil industry, both as a contractor and in NOC (National Oil Companies). He also



**Jesus Bilbao**

had his own seismic processing company in Venezuela which he sold to a Norwegian company in the '90s. Jesus was a co-founder of the Venezuelan Oil Research Institute back in '75 and was the geophysical manager for Maraven in Venezuela. More recently he has been working for a Dutch company in the area of reservoir characterization, running their South American operation. He says he enjoys the challenge: "Lots of traveling!"

Jesus and his wife Maria Cristina, a lawyer from Argentina, have four sons, two of which graduated from Creighton, Damian and Matias; Tomas graduated from American University and Nicolas is a graduate of Saint Thomas in Houston. They have three grandchildren (Damian's), two boys and a girl.

Since 1998 Jesus and Maria Cristina have been living in Houston. Last year they celebrated their 40th wedding anniversary.

# ... and about our Physics Alums

**John A. Clifford**, BS'78, wrote to express his sorrow about the passing of Dr. Kennedy. (See his humorous anecdote on p. 5.) After majoring in physics Jack attended Creighton School of Law, graduat-



**Jack Clifford**

ing in 1981. He went to work in Minneapolis with a small firm of patent and trademark lawyers which, 32 years later, has grown from 22 lawyers to about 105 lawyers and patent agents. And he has gone from the youngest lawyer in the firm to being the "senior partner" with the longest tenure. He says: "Studying physics and then going to law school turned out to be good for me. I am licensed as an attorney in Minnesota, Arizona, Nebraska, and before the United States Patent and Trademark Office. I have lived through the explosion of patent law. During my career, the total number of issued U.S. patents has doubled!" He says most of his practice involves trademark matters, and he has registered over 4,000 U.S. trademarks over the years.

Jack has three grown children. He loves to vacation in Scottsdale, Ariz., particularly during cold weather. He and his wife Kathleen live in Edina, Minn., with three cats and a poodle. His mom still runs The Afternoon gift shop, with two locations in Omaha and one at the Mall of America in Bloomington, Minn.

**Fr. Andrew Ekpenyongy, S.J.** Ph.D., MS'07, recently had a third article published based on his Ph.D. dissertation at Cambridge. He said the physics and research skills he learned at Creighton contributed immensely to the success of his research at Cambridge.

**Andrea Schiemann Ross**, BS Phy'97, was an invited guest at our 2012 Evening of Reflection. After majoring in physics at Creighton, Andrea completed a master's degree in physics at the University of Wisconsin-Madison. Her career developed rapidly, first as a sales engineer for Universal Silencer, then as a business practices specialist at Kraft Foods Group, and now as the project portfolio manager for Mutual of Omaha. Andrea shared with us some of the highly successful and satisfying career experiences she has had using insights and skills she acquired in studying physics.



*Andrea Schiemann Ross is seen here at the 2012 Evening of Reflection. Dr. Patricia Soto, Physics Club moderator, is looking on in the background.*

## In Memoriam

**Rosemary Kellen Boyle**, BSPhy '85, MS'86, died at the age of 51 on Oct. 26, 2012, 19 months after being diagnosed with stage 4 lung cancer. Rose was born in Le Mars, Iowa. She is survived by her husband, Mike; her children Lizzie, Connor and Kieran; her parents of Alton, Iowa; sisters; brothers; and many nieces and nephews.



**Rosemary Kellen Boyle**

Rose was a teaching fellow in physics while working on her master's degree at Creighton. She married Mike Boyle on Dec. 21, 1985. After moving with Mike to Seattle in 1986, she studied at the University of Washington where she earned a master's degree in genome sciences and was a research fellow in the departments of molecular biotechnology and bioengineering.

Rose was honored at the 2012 Leadership Dinner for her 17 years of volunteer services at Seattle Country Day School where her children attended. She also served on the board of directors of the Seattle Children's Theater and was instrumental in the growth of Explorations in Math, a nonprofit organization with a mission to build a sustainable math culture in elementary school.

## Visit our Website

Get the latest news and information about our Physics Department by visiting our home page: <http://physicsweb.creighton.edu> There you will find the latest news and photos of Physics Department events. Click on **Newsletters** in the drop-down menu under **News** to access all *Physics Newsletter* issues that have been published to date. Direct questions, corrections, or comments to the webmaster, **Dr. Michael Nichols**.

## Awards Received by Undergraduate and Graduate Physics Majors In the Graduating Classes of 2011 and 2012

(Year the student graduated is shown in parentheses.)

### External Awards

- Barry M. Goldwater Scholarship  
**Anya K. Burkart** ('11)
- Clare Boothe Luce Scholarship  
**Anya K. Burkart** ('11)
- Fulbright Fellowship  
**Anya K. Burkart** ('11)
- Loyola-Chicago Medical School Scholarship  
**Clifford S. Hecht** ('11)
- MIT Graduate School Assistantship  
**Anya K. Burkart** ('11)
- Mayo Graduate School Assistantship  
**Jorge A. Vergen** ('11)
- National Science Foundation Fellowship  
**Anya K. Burkart** ('11)
- National Institute of Health INBRE Award  
**Anya K. Burkart** ('11)
- The Catholic University of America  
Fellowship  
**Trevor J. Torpin** ('11)  
**Barbara L. Medvar** ('12)
- Univ. of Wisconsin-Milwaukee Fellowship  
**Aruna Wanninayake** ('11)
- Washington University (St. Louis) Fellowship  
**Robert P. Thomen** ('11)
- Kansas State University Fellowship  
**Yuli Wang** ('12)
- NASA Nebraska Space Science Award  
**Trevor J. Torpin** ('11)  
**David C. Austerberry** ('12)  
**Adam G. Hester** ('12)
- University of Kansas Geophysics Fellowship  
**Clyde A. Redger** ('12)
- University of Michigan Regents Fellowship  
**David C. Austerberry** ('12)
- University of Wisconsin-Madison Fellowship  
**Ross T. DeVol** ('12)

### Creighton University Awards

- Physics Alumni Scholarship  
**Tri D. Tran** ('11)  
**Ross T. DeVol** ('12)
- Physics Teaching Fellowship  
**Eric J. Hauger** ('11)  
**Daniel J. McGinnis** ('11)  
**Tri D. Tran** ('11)  
**Matthew A. Armbruster** ('12)  
**Gleb G. Batalin** ('12)  
**Jamison S. Duckworth** ('12)
- ### Undergraduate Physics Awards
- Thomas H. Zepf Award  
"For Outstanding Achievement in Scholarship,  
Research and Service as a Physics Major"  
**Anya K. Burkart** ('11)
- Bazil N. Lazure Award  
"For Outstanding Academic and Research  
Achievement as a Physics Major"  
**Eric J. Hauger** ('11)
- Award for Outstanding Research and  
Undergraduate Teaching in Physics  
**Jorge A. Vergen** ('11)
- Thomas H. Zepf Award  
"For Outstanding Scholarship in Physics"  
**David C. Austerberry** ('12)  
**Ross T. DeVol** ('12)  
**Adam G. Hester** ('12)
- Award for Outstanding Research in Physics  
**Tri D. Tran** ('11)  
**David C. Austerberry** ('12)
- Award for Outstanding Teaching in Physics  
**Adam G. Hester** ('12)
- Bazil N. Lazure Award  
"For Outstanding Service to the Physics Dept."  
**Adam G. Hester** ('12)
- ### Graduate Physics Awards
- AAPT Outstanding Graduate Teaching Award  
**Robert P. Thomen** ('11)  
**Trevor J. Torpin** ('11)  
**Barbara L. Medvar** ('12)  
**James F. Ross** ('12)
- Fr. Clarence M. Wagener, S.J. Award  
"For Outstanding Service to the Physics Dept."  
**Robert P. Thomen** ('11)