The University of Connecticut

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DEPARTMENT OF PHYSICS NEWS

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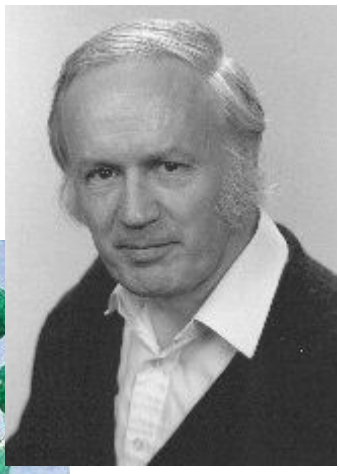
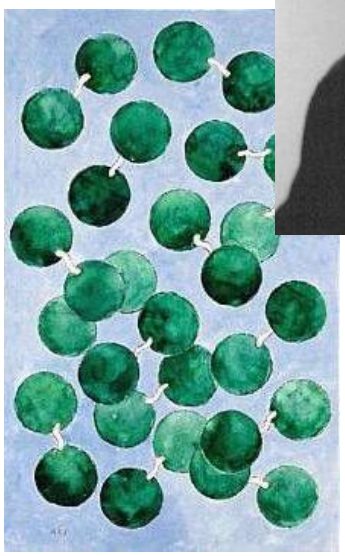




Anthony Leggett, Katzenstein Distinguished Lecturer

Friday, September 10, 2004

Anthony (Tony) J. Leggett, MacArthur Professor at the University of Illinois at Urbana-Champaign, delivers the Katzenstein Distinguished Lecture on September 10, 2004. The title of the lecture is "Superfluidity, Phase Coherence, and the New Bose-Condensed Alkali Gases." We welcome the public and encourage all science and engineering students to attend.

Professor Leggett shared the 2003 Nobel Prize in Physics with Alexei A. Abrikosov and Vitaly L. Ginzburg. These physicists made groundbreaking contributions to the theory of superconductors and superfluids, low-temperature systems with the property that a current or a flow in the fluid, once set up, may continue without ever slowing. Superfluidity is widely referred to as a macroscopic quantum phenomenon; a bucketful of liquefied helium behaves as if it had a "macroscopic wave function" obeying quantum mechanics. Professor Leggett's Nobel Prize winning contribution thirty years ago was to introduce multicomponent wave functions to explain the experimentally observed properties of the ^{3}He superfluid. Since the discovery of Bose-Einstein condensation in dilute atomic vapors nine years ago, superfluidity and other macroscopic quantum phenomena are now more topical than ever, and the macroscopic wave function remains the most important tool of a theorist in this field.

Professor Leggett is also well known for his studies of when and how a macroscopic object can behave quantum mechanically. In fact, he might object to referring to superfluidity as a macroscopic quantum phenomenon because superfluids show neither superposition nor entanglement of macroscopic objects.

Initially a classics graduate, Professor Leggett took up physics and received his doctorate at Oxford University in 1964 under the tutelage of the late Dirk ter Haar. His Nobel Prize winning work was done at University of Sussex. He has held his current position at the University of Illinois since 1983, where he continues to make important contributions to superfluidity and quantum mechanics.

2004 Charles A. Reynolds Distinguished Lecture in Physics

Professor John Reppy, Cornell University, delivered the Reynolds Distinguished Lecture on April 26. Prof. Reppy received a BA with emphasis on both math and physics in 1954 at UConn and was then offered work in Charles Reynolds' Laboratory for 75 cents per hour. This was a turning point for him. Inspired by Reynolds' enthusiasm and love of physics, Reppy chose physics and received an MA in 1956 from UConn. At Yale he worked with C. T. Lane, receiving his Ph.D. in 1962. From '62 to '66, he was an Assistant Professor at Yale. In '66 he joined the Physics Department at Cornell where he is presently the John Wetherill Professor of Physics. He is the recipient of numerous awards and honors, including the Fritz London Memorial Award in 1981. He is a member of the National Academy of Sciences.

Professor Emeritus Dwight Damon with Professor John Reppy before the lecture (left to right).

Reppy has a longstanding interest in fundamental problems in low-temperature physics, especially the properties of superfluid helium, and has made many significant contributions in this field. In his lecture, he focused on the superfluid transition of liquid ^{4}He. This "Lambda (λ) transition," so named because of the shape of the temperature dependence of the heat capacity in the vicinity of the superfluid transition, occurs at 2.17K.

He reviewed the history of superfluids, beginning with the observations of Kapitza, Allen and Misener in 1938. In particular, he addressed the critical behavior of the heat capacity as one approaches extremely close to $T\lambda$. Since the temperature of the superfluid transition decreases with increasing pressure, gravity-induced pressure variation broadens the Lambda transition. Recently, Chui and co-workers experimented in the low-temperature facility of the NASA space shuttle. This gravity-free environment allowed studies of the heat capacity in an unparalleled temperature range about $T\lambda$ to within a temperature difference as low as 2 nanoKelvin from the lambda point. A very-high-resolution calorimeter with special thermal isolation allowed such studies to be made, which enabled very precise comparisons with the predictions of the Renormalization Group, and will serve as stimulus for further work in this area.

Reppy introduced the idea of a supersolid in connection with the search for a superfluid transition in solid helium dispersed in a porous medium. The results of studies by Chan and Kim of Penn State University were recently reported in Nature. They grew solid ^{4}He inside a porous Vycor glass disk and observed the resonant period of a torsional pendulum, which supported the enclosed disk containing the solid helium. As the temperature is reduced below 0.1 K, they see a sudden drop in the period of this system, which is dependent on oscillation amplitude.

These results indicate a supersolid phase. Vacancies and other defects are expected to be present in solid ^{4}He. These zero-point vacancies and defects can, in principle, permit the appearance of superfluidity in the solid. In 1970, Prof. A. J. Leggett suggested the possibility of a supersolid, and at that time proposed experiments to search for this phase.

Prof. Reppy spoke proudly of the accomplishments of M. H. (Moses) Chan, for whom he had been the doctoral thesis advisor. The creativity in important and challenging experiments is a hallmark of Prof. Reppy's laboratory and continues in this new work reported by his former student Moses Chan. A spirited discussion followed his talk. (Prof. A. J. Leggett has agreed to present the 2004 Katzenstein, as noted on our cover.)

The Norman Hascoe Lectures on the Frontiers of Science

The Department of Physics has continued to play a leading role in a new lecture series funded by Mr. Norman Hascoe of Greenwich, Connecticut, aimed at exciting undergraduates with scientific interests in frontier areas of science. Each lecture is open to the public and is followed by a reception and an informal panel discussion. In our sixth year, we had five outstanding lectures in the general field of nanoscale science:

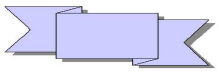
1. **Fleming Crim**, Chemistry, University of Wisconsin-Madison, "Controlling Chemical Reactions and Watching Vibrational Energy Flow in Gases and Liquids"
2. **Richard Martel**, INRS-Eau, Terre & Environnement, Quebec, "Scientific Issues with Carbon Nanotube Transistors"
3. **Jean Dalibard**, Ecole Normale Supérieure, "Atomic Bose-Einstein Condensates: Quantum Coherence and Superfluidity"
4. **Elias Greenbaum**, Oak Ridge National Laboratory, "New Vistas in Photosynthesis Research: Renewable Hydrogen Production, Algal Biosensors for Environmental Protection and Artificial Sight"
5. **Herbert Walther**, Physik der Universität München, "Quantum Optics of Single Atoms"

Nanoscale science involves application of the concepts and techniques of physics to systems at a higher level of complexity (e.g. the supramolecular and macromolecular) and is the focus of major federal research funding initiatives. A comparably exciting lecture program for next year is being planned.

Prizes and Awards

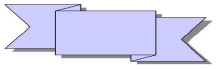
Phil Best

The Katzenstein Prize for the best science essay by a graduating senior was won by two students this year: "Calculations of Potential Curves for Alkali Dimers at Excited Asymptotes $X(n_g s)+X^*(n_e s)$" was submitted by **Brad Normand**, who is advised by **William Stwalley**, and "Application of the Weyl-Titchmarsh-Kodaira Spectral Theorem to Soluble Models of Molecular Ionization" was entered by **Chris Gauthier,** advised by **Gerald Dunne**. It's the first time that the committee has declared a tie. Brad plans to get his Ph.D. in physics at UConn and continue his studies in music as well. Chris has entered the graduate program at the University of Michigan for his physics degree.

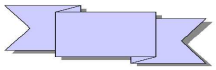


Inductees into Sigma Pi Sigma, the physics honor society, were undergraduates **Kurt Doughty, Aaron Fagan, Melissa Grakowsky, Caroline Loglisci, Kandra Painter, Anthony Palladino, Chris Regini and Calvin Zulick**, and graduate student **James O'Brien**. The Special Colloquium was presented by Professor **Reinhold Blumel**, of Wesleyan University. The title of his talk was "Charged-Particle Confinement with Walls of Pure Energy." Professor Blumel gave a delightful presentation, punctuated with demonstrations on ion trapping. All of the published research he described had been carried out by undergraduate students.

A total of 10 students graduated in Physics this past year, plus one in Engineering Physics, one in Education/Physics, and one a Math major/Physics minor. The graduates included four with high honors, three with a second degree in Math, and one with a second degree in Music.



The University of Connecticut Excellence in High School Physics Teaching Award went to **David Scrofari**, from Staples High School in Westport. Currently the President of the Connecticut Association of Physics Teachers, David's accomplishments can perhaps best be seen through the achievements of his students. He is advisor to Staples High School NEDC (National Engineering and Design Competition) team, national first place winner, Spring 2001. In 2002 one of David's students was a member of the U.S. Physics Team. Another of his students, mentored at Yale, won the Intel and Siemens-Westinghouse student research award.

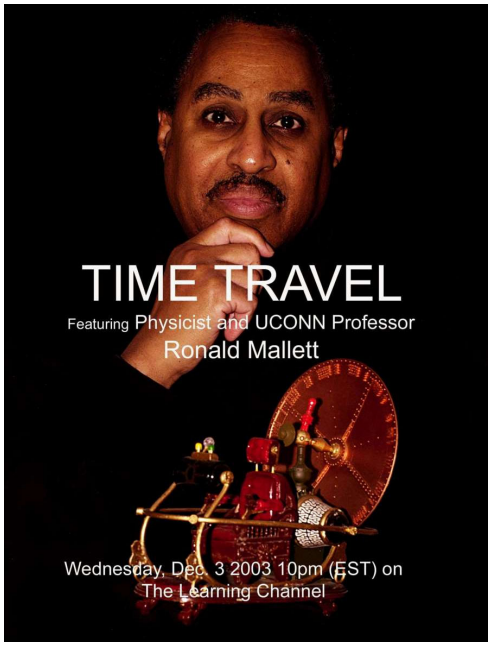


Andrey Dobrynin was awarded the 2003-04 Directors Award for Faculty Excellence by the Polymer Program in the Institute of Materials Science. The award is to recognize Andrey's excellence and leadership in teaching, research and service to the program. His selection was based on his contributions as well as a nomination by the faculty of the program. Andrey's name will be entered on a permanent plaque of awardees displayed outside the Polymer Program office, and he will receive $1000. Congratulations and keep up the good work, Andrey!

Studying Scattering

Professor **Munir Islam** just spent his sabbatic leave (Spring 2004) at the State University of New York at Stony Brook. He visited the Yang Institute for Theoretical Physics and the High Energy Physics Group there. With his graduate student, Richard Luddy, and a post-doctoral fellow, Alexei Prokudin, at the University of Torino, he is studying proton-proton elastic scattering at the Large Hadron Collider (LHC). The goal is to determine the physical structure of the proton. The LHC is currently being built at the European Centre for Particle Physics Research (CERN) in Geneva and is scheduled to be completed in 2007. At LHC, a beam of protons will hit head-on another equally energetic beam of oppositely-directed protons at a center-of-mass (c.m.) energy of 14 Trillion Electron Volts (TeV). The current highest energy accelerator Tevatron at Fermi Lab near Chicago has proton and antiproton beams colliding head-on at a c.m. energy of 1.8 TeV.

Gayanath Fernando has been working on a book entitled "Metallic Multilayers and their Applications" for Elsevier (Holland). The book will cover topics such as the theory and experiments related to giant magnetoresistance and other research topics on metallic multilayers. Gayanath hopes to finish the book in 2005.



Documentary on TLC

On December 3, 2003 at 10:00pm (EST), The Learning Channel aired an hour long documentary on time travel. The program discussed Einstein's special and general theories of relativity and featured the current research of University of Connecticut Professor **Ronald Mallett**. Most recently, Professor Mallett's work was mentioned by the science journalist Sharon Begley in the Wall Street Journal (November 21, 2003). Additional information on Dr. Mallett's research can be found by visiting his web page at www.physics.uconn.edu.

"Scholar-Athletes"

Two of our recent retirees, **Bill Hines** and **Quentin Kessel**, were awarded the newly-minted accolade of "Scholar-Athlete." The shirts were going to be courtesy of Patti Bostic of the Department of Recreational Services, who commented: "Bill certainly deserves this honor. He spends more time in the gym than the other faculty..... combined. And that's just while he swims the first hundred yards." When asked about Quentin, Patti laughed, saying "Maybe 30 years ago…" We were able to pick up the extra shirt for Quentin as we slipped out the door. **Doug Hamilton** did the custom printing for us.

New Faces

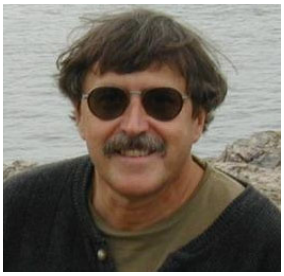
Alex Kovner, a high energy particle theorist, will join the Physics Faculty in Fall 2004. Alex is an expert on strong-coupling quantum field theories, and will join the High Energy Theory Group. Born in Lithuania, Alex studied in Tel Aviv, and did postdoctoral work in Vancouver, Los Alamos and Minnesota before joining Oxford University as a PPARC Advanced Fellow. We look forward to welcoming Alex, his wife Ziva, and children Rotem, David and Daniel to Connecticut.

Tom Blum, an expert in lattice gauge theory, a nonperturbative approach to strong coupling theories such as quantum chromodynamics, joined the Physics Faculty in Spring 2004. Tom did his undergraduate work at the University of Washington, Seattle, where he majored in Aeronautical Engineering, and then did his PhD in Physics at the University of Arizona, Tuscon. He subsequently joined Brookhaven National Laboratory as a High Energy Theory postdoctoral fellow, and then as a RIKEN/BNL Fellow. He joins UConn in a joint position with the RIKEN/BNL Research Center, a Japan/US collaborative research center based at Brookhaven and devoted to the study of the interface of particle and nuclear physics, especially the solution of QCD. We welcome Tom, his wife Linda, and daughters Laura and Erica, to Storrs.

Vishesh Khemani joins the High Energy Theory Group as a postdoctoral fellow in Fall 2004. Vishesh obtained his undergraduate degree at Dartmouth College, and has just completed his PhD in the Center for Theoretical Physics at MIT, under the supervision of Professor Edward Farhi, while also collaborating with Professor Robert Jaffe. Vishesh is an expert in quantum field theory, especially the study of quantum solitons, and has also made important contributions to the understanding of the Casimir effect.

Michael Lublinsky will join the particle theory group at UConn on October 1, 2004 as a research associate. Michael graduated in 2002 from the Technion, Israel where he conducted research in the physics of parton saturation at high energies under the guidance of Prof. Eugene Levin, one of the foremost world experts on the subject. After graduating, Michael moved to Hamburg, Germany where during the last two years he has continued his research at DESY, the site of the large electron-proton collider. Michael's work involved among other things a successful description of the deep inelastic scattering data collected at DESY in terms of the parton saturation model. Michael will continue his research here at UConn and will further strengthen the ties between UConn particle theory group and BNL, where heavy ion collision experiments are conducted at RHIC (Relativistic Heavy Ion Collider) and where the parton saturation physics is believed to play a very important role.

Philippe Pellegrini joined the Atomic, Molecular, and Optical Theory Group as a postdoctoral fellow in February 2004, after a short postdoctoral stay in the group of Eberhard Tiemann (Hannover, Germany). Philippe completed his undergraduate studies (1998) and his Master's degree (1999) in Physics at the University of Burgundy (Dijon, France), and obtained his Ph.D. degree in 2003 from the *Laboratoire Aimé Cotton* (CNRS and University of Paris XI) under the supervision of Olivier Dulieu and Françoise Masnou-Seeuws. Philippe is an expert in theoretical AMO physics, especially the study of photoassociation processes in ultracold gases.



Vernon F. Cormier, Professor of Geophysics, will be joining our department this fall as the College of Liberal Arts and Sciences reorganizes its departments. He is also interested in Computational Physics and we expect future research collaborations with other faculty members. Vernon's primary research interest is solid earth geophysics, with an emphasis on deep and three-dimensionally heterogeneous structure of the earth inferred from seismic wavefields. Anastasia Stroujkova, his postdoctoral fellow, will also make the move to Physics. She received her Ph.D. in Geophysics from Duke University in 2000. We welcome them and hope they enjoy working with us.

Departures

Gloria Ramos has accepted a permanent faculty position at Citrus College in Glendora, California. She came to Connecticut as a graduate student in Fall 1995 and earned a Master's degree in in Education while working as our Manager of Laboratory Services, a position she has held since January 2000. Gloria will enjoy returning to a warmer climate and is looking forward to teaching again although she admits that she will miss all the friends she made here. We will also miss her and wish her all the best.

Michael Ramsey-Musolf has decided to resign his Associate Professor position here in Connecticut and remain at the California Institute of Technology in Pasadena where he has recently been on leave. Michael plans to continue his collaborative research efforts with his colleagues at UConn and will have an adjunct position here. We wish him the best and will miss him as well.

Power for Deep Space

Juan Lozano (Ph.D., 2001) has made good use of his experience working with Professors Quentin Kessel, **Edward Pollack** and **Winthrop Smith** on their NASA grant, "Atomic and Molecular Processes in Planetary Atmospheres." For the last two years he has been assisting the effort from his position as a National Research Council Postdoctoral Associate at NASA's Jet Propulsion Laboratory (JPL) in Pasadena, California. The photo shows Juan (on the right) and **Thomas Ehrenreich** in the JPL Atomic Physics Laboratory, where last January they were visited by Kessel, Pollack and Smith to make measurements of soft x-rays generated by highly-charged ions passing through gases. These measurements are intended to simulate the conditions of heavy solar-wind ions passing through cometary gases. Thomas Ehrenreich is currently a postdoc in the department's Van de Graaff Accelerator Laboratory.

Juan has recently transferred to the Isotope Thermoelectrics Laboratory, which concentrates on new and novel propulsion systems for space travel. He is currently upgrading and automating their data acquisition systems. The bulk of his work will be the resurrection of the SP-100 simulation code, which was used in the 1980s. It has 8 parts: reactor, reactor instrumentation and control, shield, heat transport, converter, heat rejection, power conditioning control and distribution, and mechanical/structural interface - a nice mix of physics and computer science.

The only power source for deep space exploration is thermoelectric. A small nuclear reactor converts heat to electricity by using stacks of thermoelectrics in different configurations and delivers power to craft subsystems. This is how the Pioneers, Voyagers and Cassini are powered. A new project called JIMO (Jupiter Icy Moons Orbiter) provides the funding for the group to develop a high efficiency thermoelectric pod, which they hope to deliver in a couple of years.

Moving On Up

Shinsuke Nishigaki, a postdoctoral fellow in the high energy theory group, working with Gerald Dunne on the phase structure of quantum field theories at finite temperature and density, left UConn in Summer 2003 to take up a permanent Associate Professorship at Shimane University, Japan. We congratulate Shinsuke on this achievement and wish him and his wife Miki the best of luck for the future.

In Spring 2003 **Kumar Rao** completed his Ph.D. thesis, entitled "Topics in Finite Temperature Quantum Field Theory," under the supervision of Gerald Dunne. Kumar currently has a postdoctoral research position at TIFR, the Tata Institute for Fundamental Research (Mumbai), which is one of the top physics research centers in India.

Marat Valiev has just accepted a permanent position as a research scientist at Pacific Northwest National Lab (PNNL) operated by the Department of Energy. Marat began working at PNNL last fall as a senior researcher continuing his studies of electronic structure. Marat received his Ph.D. in December, 1997 under the tutelage of **Gayanath Fernando**.

Another student of Dr. Fernando's, **Marwan Rasamny**, Ph.D. 1999, is now at Delaware State University as a tenure-track faculty member. Marwan is serving as a co-PI on a $2.5 million, 5-year NSF grant to develop a comprehensive program for the retention, quality training and advancement of STEM (science, technology, engineering, and mathematics) students. He is also interim Chair of the Physics Department.

Almost First/The Man Behind

H. M. Fried - Herb to his friends, Herbert to his enemies - had the pleasure of spending two graduate years in UConn's Physics Department, 1950-52, when it was housed in the basement of Beach Hall (if memory serves). Night after night, he barricaded himself in an old lab, and did his homework with the aid of a borrowed radio playing classical music, very loudly. While finishing his Master's, he fell in love with and married a stunning UConn coed; and the newlyweds then moved into a tiny apartment in the upper half of a converted barn at Four Corners. He was all set to become the Department's first Ph.D. student when his NYC Draft Board intervened, extracted him from lovely Storrs, and enrolled him, minimum class, in the U.S. Army.

This was the time of the "Korean Emergency," and young men were being called to military service all over the country. Luckily for Herb, an armistice was signed two weeks after his induction; and so he spent the better part of the next two years working as a soldier-scientist, stationed at the Aberdeen Proving Grounds, MD, instead of as a grunt on the ground, in Korea. His company at APG was known informally as the "most route-stepping outfit" in the Army, definitely not a military compliment. They were led by a sergeant with a Ph.D., and commanded by a 2nd Lieutenant who barely made it through grammar school (and had a certain predisposition to "...them !@#$%^&* college students!").

At this point, a desire to travel came upon the young couple, and they resolved, when discharged from the Army, to head for the Golden State of California. A Ph.D. from Stanford, and temporary positions at ENS/Paris, UCLA, IAS/Princeton, and NYU's Courant Institute followed; but in '64, Herb finally settled down to a professorial career at Brown University. Year followed year with amazing rapidity; and one day, at a Cornell reception, a tall, physics professor approached, held out his hand, and introduced himself: "You don't remember me", he said, "but one night when we both were on guard duty at APG, you told me how wonderful UConn was, and what a great place it is to study low-temperature Physics. Well, I followed your advice, obtained my M.S. there, and here I am now, a Professor at Cornell!"

What makes this little vignette worth telling is that the gentleman in question, David Lee, went on to win a Nobel Prize. And when he was later feted at Storrs, Herb was also invited - as the man behind it all - to a glorious dinner party, thrown at the UConn Faculty Club. How the memory pleases! A Nobel Prize for which ol' Herb was partly responsible! To this day, as a sober and serious Professor Emeritus at Brown, he looks back upon UConn with pleasure, with appreciation, and with the sure feeling that those two, happy years were most worthwhile.

Where Are They Now?

Andrew Rinzler

Several months prior to graduation Andrew Rinzler (Ph.D. 1991; advisor: **Larry Kappers**, project supervisor: **Ralph Bartram**) accepted a National Research Council postdoc at the Army Research, Engineering and Development Center (ARDEC) in Picatinny, NJ working with **Frank Owens** (also a UConn physics alumnus, advisor: **Randy Gilliam**). With the anticipated start date approaching, Andrew's girlfriend, Marybeth O'Brien (UConn, class of 1987), took a job in nearby Morristown and leased an apartment for them in Rockaway. Four months later (as these things go) Andrew finally arrived, Ph.D. in hand, and so did their furniture.

While at ARDEC, Andrew became fascinated with carbon nanotubes, a newly-discovered molecular form of carbon related to the spherical, all carbon molecule C_{60}. When not occupied with Raman spectroscopy and atomic force microscopy on the fracture surfaces of TNT and HDX (another military explosive), he spent his time reading and thinking about nanotube growth mechanisms and their potential applications. With no scientific outlet for these thoughts he wrote them up in a letter to Rick Smalley, the co-discoverer of C_{60}. Smalley wrote back suggesting that Andrew formally apply for a postdoctoral position he was looking to fill in his lab. Following an interview, the job offer was made and accepted.

The 4-year stint in Smalley's lab was an exciting and productive time. Initial work with multiwall nanotubes (in which the tubes are nested one within

the other) resulted in a study of electron field emission from individual nanotubes, and then in methods developed for their use as the probing tip in atomic-force microscopy. Later the focus shifted to single-wall nanotubes. Methods of single-wall nanotube production were known at the time but the purity was very low. With Andrew making important contributions, the breakthrough came from the lab in a novel, dual-pulsed-laser vaporization process that produced single-wall nanotubes with purities as high as 90%.

Andrew and Marybeth share a moment (Marybeth is the one behind the camera).

In 1998 Andrew accepted a tenure-track faculty position at the University of Florida in Gainesville. His group, comprised of 5 graduate and 3 undergraduate students, continues research on the properties and applications of nanotubes. Their most recent work, in the journal *Nano Letters* is a novel method for separating metallic from semi-conducting nanotubes. Tenured and promoted to Associate Professor this year, Andrew looks back on the first graduate seminar he gave at UConn, in which his tongue became so firmly glued to the roof of his mouth that **Dave Perry** kindly provided a glass of water for him, and was later heard to comment "I didn't know if I should hand it to him or throw it on him".

Andrew and Marybeth have 4 dogs, a cat, 17 chickens, 4 goats, a donkey and 4 horses. Really! Their spread, called "Useless Ranch", is in Newberry, Florida.

Frederick Su

After getting my Ph.D. in 1979 with Ron Mallett, I bicycled across country with Gail Bertolini. We successfully completed the trip in 80 days, starting from Williamsburg, VA, and ending in Eugene, OR. I was in need of a physical challenge to assuage the mental torture of the past 8 years.

Gail and I met in graduate school. She was pursuing her Master's and was working for **Cynthia Peterson**. After our cross-country bike trip, we got married. I figured if she could stand those rigors, then she could put up with me on our journey through life. And a strange journey it has been. She married a physicist and ended up with a writer/publisher.

After our bike trip, she went to work for Upjohn in Kalamazoo, MI. I taught astronomy part-time at Western Michigan University. Then, I moved to Annapolis, MD, by myself, to work for The Illinois Institute of Technology/Electromagnetic Compatibility Analysis Center, but lasted only 9 months, due to loneliness.

In 1981, we left Kalamazoo and moved to Seattle, where I went to work for Boeing. Alas, I hated Boeing and was ready to quit after 5 months. Since we would owe the relocation expenses (over $5,000) if I had quit before one year, I stayed about 15 months, and then quit. We worked for over a year as assistant condominium managers on weekends. Midweek, I worked as a general laborer cutting grass, weedwhacking, painting curbs, and doing other odd jobs. For a change of pace, I taught physics at Washington State University one year, even teaching a graduate course in general relativity. From there, we moved back west of the mountains to Bellingham (listed as #2 best place to retire in an AARP magazine article).

I got part-time positions at SPIE (The International Society for Optical Engineering) and Western

STAY IN TOUCH

We're adding a new feature to our departmental web page as well as assisting our Alumni Office in updating their records. We would like to start an email distribution list for our Physics Alumni so that we can update you promptly when we have important news to share. We are asking you to help us by logging on to our site http://www.phys.uconn.edu and clicking onto the link for Alumni. That will take you to a page that requests your contact info, including your email address. There is also a place for any comments you would like to send us.

Washington University. I stayed with SPIE for about 13 fun years as a part-time and/or freelance writer, editor, and consultant. Though I was not an optical physicist per se, my physics background allowed me to ask intelligent questions of people on the forefront of technology and to write about it. I interviewed 4 Nobel laureates. When the newspaper became a magazine under a new editor, I lost my freelance writing position. Gail worked those years at the local Georgia-Pacific pulp and tissue mill as a quality assurance chemist.

Gail and Frederick Su.

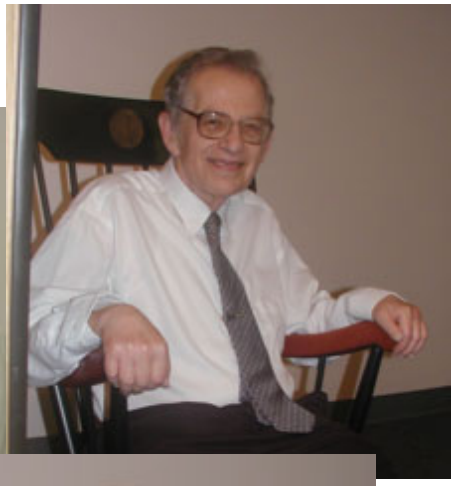
In 2001, I formed my own publishing company, bytewrite LLC, to publish my novel, *An American Sin*. It took two years to write, in 1988-1990, I believe. It was on the auction block for 10 years to over 100 (possibly over 200 — I lost track) agents and/or publishers (all while I was working part-time for SPIE). One World Books (Ballantine) and The University of Nevada Press showed the most interest, but in the end, they passed, so I self-published. See my website www.bytewrite.com.

An American Sin ($15, Trade Paperback, 335 pages, bytewrite LLC, ISBN 0-9711206-0-9, October 2001), was the winner of the Multicultural Fiction category of the Independent Publisher (IPPY) Book Awards 2002. My novel was also a finalist in the (1) 2002 Benjamin Franklin Awards, Publishers Marketing Association, Best New Voice—Fiction (first book by a new author) and (2) The Binghamton (NY) University John Gardner Fiction Book Award 2001.

Funny, as a graduate student in physics, I made fun of English majors. I didn't turn into an English major, since I learned my writing craft from a blue-collar class at a technical college. Students there had what I called "life experience." But I do profoundly respect the craft of writing now, as I respect the craft of physics.

Feel free to email me at fred@bytewrite.com. Please put "UConn" or "An American Sin" in the subject line so I don't mistakenly delete your email along with the scores of spam emails I receive.

September 19, 2003 Retirement Party



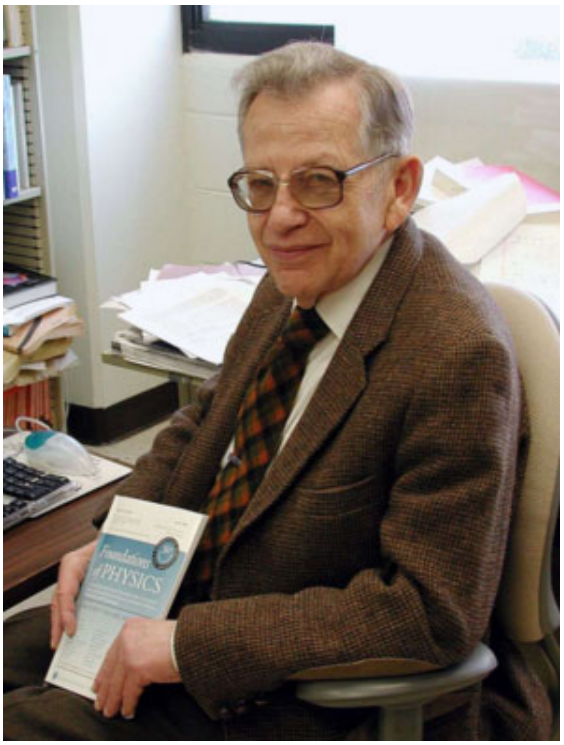
Photos of some of our other retirees [Samurai] from the September 19, 2003 reception. Clockwise from left, ***David Madasci*** *(seated, with friends and colleagues),* ***Kurt Haller*** *and* ***Joseph Budnick****.*

In Memorium
Kurt Haller (5/6/1928-5/5/2004)

On this sad occasion we honor and celebrate the life of Kurt Haller, Professor of Physics at the University of Connecticut, a man of great generosity of spirit, a man totally dedicated to his profession of physics, and a man of the highest intellectual integrity. Kurt's long and productive career has brought him the friendship, respect and recognition of his students as well as his colleagues around the world.

Kurt was born in Vienna, Austria, and came to the United States at the age of ten, leaving behind the violence and terror that prevailed in Austria during the 1930's. His mentor, a physician aunt, steered him to Columbia College where he earned his A.B. degree in 1949. Kurt completed his graduate studies at Columbia University and received his Ph.D. in theoretical physics in 1958. After a two-year postdoctoral research appointment at Washington University, St. Louis, he joined the Faculty of the Physics Department of New York University. Then, in 1964, Kurt moved permanently to the University of Connecticut at Storrs, and embarked on a fruitful career of research, teaching, and academic service that has now spanned forty years.

Kurt's research work earned him many distinctions and honors. In 1973-74 Kurt was a Fulbright-Hays Visiting Professor in Austria at the Institut für Theoretische Physik, Universität Graz. In 1978 Kurt was elected a Fellow of the American Physical Society, which cited his fundamental work on the consistent quantization of gauge theories. Kurt was also the Principal Investigator on a research grant in theoretical elementary particle physics from the US Department of Energy from 1978 until now. On the occasion of his seventieth birthday, 28 physicists from around the world contributed scientific articles dedicated to Kurt, for his Festschrift, which was published as three volumes of the physics journal *Foundations of Physics*.



In addition to his fundamental research in theoretical particle physics, Kurt was a tireless champion of academic life at the University of Connecticut. He served the UConn Physics Department as Acting Department Head on three separate occasions. He devoted enormous amounts of energy and enthusiasm to developing and strengthening the graduate education and research program at UConn, as the Associate Department Head for Graduate Education and Research. He was a much-admired teacher and a devoted mentor to his graduate students, all of whom have gone on to successful careers in physics as well as other fields. He served the University of Connecticut on countless Committees, in the Physics Department, in the College of Liberal Arts and Sciences and in the University as a whole. Kurt served two three-year terms on the University Senate and was a long-standing member of the Graduate Faculty Council. His wisdom, common sense and perspective will be sorely missed.

Kurt established the Particle Physics Group at the University of Connecticut. This now thriving research group stands as a testimony to Kurt's academic foresight and dedication. The group organized the 1988 Meeting of the Division of Particles and Fields of the American Physical Society. Kurt, as Chair of the Organizing Committee, played a pivotal role. The Conference proceedings (Proceedings of the Storrs Meeting, World Scientific, 1989), with its 900 pages of presented scientific discourse, serves as a permanent testimonial to Kurt's commitment to his profession.

More information about Kurt Haller can be found on his web page at http://www.physics.uconn.edu/faculty/haller.html.

At the 2004 International Association for Relativistic Dynamics Conference in Saas Fee, Switzerland, a memorial session was held on June 14 in honor of Kurt Haller.

ANNOUNCING OUR TWO NEWEST ENDOWMENTS:

New: We are touched by the swift support of our newest endowment, the "Endowment for Physics Research and Graduate Education," which provides yearly research awards of $500 to our best graduate students. The initial impetus was to honor Professor **Kurt Haller** and other faculty for their enormous contributions to graduate education, the department and the university. The first award will be made in the name of our late Professor Haller whose extraordinary contributions to the University were described earlier in this newsletter. Donations to this fund are welcome and may be made in the name of any faculty or staff member you wish to honor. We already have donations and pledges from individual faculty members and friends, several in excess of a thousand dollars. The University of Connecticut Foundation requires a minimum of $10,000 to set up a faculty-established fund (there is a $25,000 minimum for other endowments), after which the Foundation will apply to the State of Connecticut for a 50% match. For the resulting $15,000 endowment, four percent of the principal ($600 in this example) will be made available for the awards. Our goal is to reach a principal of $30,000 in this fund so that we may make two awards each year. We are eager to have your help in reaching this goal!

This is not the first time our faculty and staff have contributed more than just their time and effort to make this an outstanding department. Encouraged by Drs. **Henry and Constance Katzenstein** who established their endowment with an initial gift of $30,000, the department pledged and met our goal to raise an additional $20,000 for the Katzenstein fund. David Lee (M.S. 1956, Professor of Physics at Cornell and Nobel Laureate) and Ike Blonder (B.S. 1938 and a pioneer in UHV TV) have each contributed significantly.

Thank you to **Michael Zatzick**, (M.A. 1956) for his very generous support of UConn Physics.

Isaac S. Blonder went further and established another endowment, the Isaac S. and Lois W. Blonder Graduate Fellowship in Physics. More recently our 1975 Ph.D. **Nagavarapu S. Mohan** established the KMS Nagavarapu Graduate Award in Physics.

New: In our last newsletter we reported that the late **Marshall Walker's** children were in the process of establishing an endowment to maintain and fully fund the annual award for the best graduate teaching assistant. This year we are happy to announce that the Marshall and Georgiana Walker Endowment has been established and is now listed among the endowments below. Again, our thanks to **Patricia Ducharme** of Chaplin, Connecticut, and Dr. **Robert S. Walker** of Blue Hill, Maine for their generosity. Perhaps those of you who have been honored by this award would now like to give back by contributing to this endowment!

We thank **Ramona Arnett** and **Lou Eigen** for their generous contribution of $1000 via the Morris and Beatrice Eigen Foundation to support our students. Ramona and Lou also very generously donated an antique rug from Meshkabad in northwestern Iran. We haven't been able to find the village on the map, but the rug is a work of art. It gives our Physics Library a touch of elegance in the cozy reading area.

Our thanks also to Professor **David M. Lee**, Cornell University, Nobel Laureate 1996, for another very generous contribution to be used exclusively for Physics. Professor Lee attended UConn at the same time as Prof. John Reppy (see p.2) and served in the Korean War with Herbert Fried (see p.7).

We are eager to provide our top graduate students with supplements from these funds. The funds are important in attracting and retaining topflight students. Receiving an award represents a high honor for our students and the amounts are more than token for a student on a tight budget. We are grateful to those of you who contribute to these funds. Many of you respond to the general solicitations sent out by the University; we would be delighted if you used the fund numbers below to direct such contributions to the Physics Department. They make a world of difference to us, both to our morale and to our effectiveness in assisting our students.

Making a Gift

There are many ways of making a gift including checks; marketable securities; planned or estate gifts; and through payroll deduction for University employees. Checks should be made payable to The University of Connecticut Foundation, with a cover note directing your gift. All gifts are eligible for tax deductions as The University of Connecticut Foundation, Inc. is recognized as a 501(c)(3) nonprofit organization. Donors have the option of remaining anonymous if they wish.

I/we would like to support the Physics Department programs.
Please direct my gift of $_____ to:

- Endowment for Physics Research and Graduate Education (30911-2014)
- Marshall and Georgiana Walker Graduate Award Fund (30876 -2014)
- Katzenstein Distinguished Lecture Series Endowment (30438-2014)
- Charles Swenberg Memorial Endowment (30641-2014)
- Isaac S. and Lois W. Blonder Graduate Fellowship Endowment (30743-2014)
- KMS Nagavarapu Graduate Award Endowment (30723-2014)
- Physics Department Unrestricted Fund (20555-2014)

Matching Gift

- I work for a matching gift company. The form is enclosed.

My company is: _____
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phone/fax _____
email _____

Should you wish to support one of these efforts, please send your contribution directly to the University of Connecticut Foundation with the fund number of the program of interest to you written on your check.

University of Connecticut Foundation
2390 Alumni Drive
Storrs, CT 06269-3206

Thank you for your support!

Any news about yourself that you are interested in sharing? We have enjoyed the unsolicited mail we received as a result of our last newsletter so now we're actively soliciting. Please send suggestions to:

David Markowitz, Editor
at Department address.

SAVE THE DATE
September 10, 2004

Invitations for the Katzenstein dinner have gone out to those of you with New England, NY, NJ and PA addresses. If you are interested in attending and live outside of this area, please contact Kim Giard at 860-486-4924, email: kim.giard@uconn.edu for an invitation.