



Department of Physics Newsletter

Volume 4

Fall 2002 – Spring 2003

NASA Awards Center for Optical Sensing and Imaging to City College

National Aeronautics and Space Administration (NASA) has awarded the City College of New York a 5-year \$6M grant to establish a Center for Optical Sensing and Imaging (COSI) under the NASA University Research Center Program. Robert R. Alfano, Distinguished Professor of Science and Engineering, is the Director of the Center and Sam Ahmed, Herbert G. Kayser Professor of Electrical Engineering is the Deputy Director. Other Physics Department faculty members participating in the COSI are Swapan K. Gayen and Vladimir Petricevic.

The mission of COSI will be to develop methods and instruments for sensing and imaging of the earth and environment and to attract and train students who are U.S. citizens, preferably from underrepresented minority groups, in related science and engineering disciplines. The Center will train a minimum of 16 graduate and 10 undergraduate students annually, and will also institute a vigorous K-12 science education program.

The scientific and technological objectives of COSI include development of optical techniques and instruments for atmosphere and ocean monitoring, imaging targets and transmitting optical signal through clouds, fog, ice, and rain; developing lasers and detectors for use in remote sensing and optical communications; detection of vegetation and land cover and measurement of the temperature of ocean waters, and sensing of microorganisms (e.g., bacteria) in the environment. Researchers at COSI will collaborate closely with scientists at other NASA Centers including the Goddard Institute for Space Studies, the Langley Research Center, the Glenn Research Center and the Goddard Space Flight Center to accomplish these objectives.

“The Center will produce high-quality, cutting-edge research with significant economic and social impacts and at the same time train minority students to become the scientists of tomorrow,” said CCNY President Gregory Williams in a statement.

Myriam Sarachik Becomes APS President

Myriam Sarachik, Distinguished Professor of Physics at CCNY, is the President of the American Physical Society (APS) for 2003. She was the President Elect in 2002, and Vice President in 2001. Dr. Sarachik is a condensed matter physicist, and heads a strong experimental program in low temperature physics with current focus on two-dimensional system of electrons and single molecule magnets. She is a Member of the National Academy of Sciences. Dr. Sarachik is the third female President of the APS, and will be succeeded by Helen Quinn, the current President-elect. The first two women to serve as APS Presidents were the late Chien-Shiung Wu (1975), and Mildred Dresselhaus (1984). Sarachik’s priorities as the APS President include “increasing funding for the sciences, promoting scientific literacy in the general public, encouraging and fostering unity within the physics community, and helping to facilitate international exchange and collaboration.”

In Memory

*Physics Department mourns the loss of four distinguished members. **Philip Baumel, Melvin Lax, Kenneth Rubin, and Bunji Sakita** passed away within a span of a few months. Reminiscences of their lives and accomplishments by friends and colleagues begin on Page 4.*

Lubell-Fest Held at the Graduate Center

A symposium to celebrate the 60th Birthday of Professor Michael Lubell was held on May 29, 2003 at the Science Center of the Graduate School and University Center of CUNY. Professor Lubell is Chair of the Physics Department of the City College of New York, and the Director of Public Affairs of the American Physical Society (APS). The symposium started with introductory remarks by Distinguished Professor Myriam Sarachik, who is also the current APS President. Professor D. Allan Bromley of Yale University highlighted Professor Lubell's contribution to Physics, Physics community, and science policy in his talk, "Michael Lubell: A Major National Resource." Professor Gordon Cates of West Virginia University presented a lucid account of Professor Lubell's crowning scientific achievement, generation of polarized electrons, and how it affected his own research in his talk, "From Lubell's Polarized Electrons to Polarized Lungs: My Life of Optical Pumping." Other talks in the symposium included "Quantum Time Entanglement and the British Naval Disaster of 1707" by Professor James McGuire of Tulane University, "Kaon Physics" by Professor Michael Zeller of Yale University, "Future Visions: Particle Physics in 21st Century" by Professor Jonathan Bagger of Johns Hopkins University, and "(Non) magnetic Thanks to Mike" by Professor Peter Koch of the State University of New York at Stony Brook.

The technical session was followed by a reception in the Skylight Room at the Graduate Center. Colleagues and friends toasted Professor Lubell for his accomplishments. The symposium was organized by Professor Sultan Catto.

Physics Majors Month Observed

The Department observed October 2002 as the Physics Majors Month. The goal was to bring the Physics majors together, provide them with an opportunity to get to know one other and the faculty members who may not be teaching them in a course, introduce them to the ongoing research efforts in the department, and to develop in them a sense of belonging to the department. Joseph L. Birman, Distinguished Professor of Physics, led the month long activities which included a series of presentations by several faculty members, informal

discussion sessions, and tours of some of the research laboratories in the department. The presentations included: "*Seeing with lasers*" (with lab tour) by Professor Swapam K. Gayen, "*Experiments at very low temperatures*" (with lab tour) by Professor Myriam Sarachik, "*Is resistance a fundamental quantity?*" by Professor David Schmeltzer, "*Biophysics*" by Dr. Karen Hauser, "*High Energy Physics theory*" by Professor V. P. Nair, "*Understanding Physics*" (with demonstrations) by Professor Richard Steinberg, and "*Condensed Matter theory*," by Professor Joseph L. Birman. A faculty-student luncheon on October 29, 2002 concluded the activities of the month.

Faculty Achievements

Professor David Schemeltzer received a Certificate of Recognition from the CUNY Chancellor Dr. Mathew Goldstein. He was cited for his "outstanding scholarly achievements and contributions to the creation and transmittal of knowledge." The certificate was presented on the occasion of the "Salute to Scholars" held on December 10, 2002.

Professor Dan Greenberger was elected an honorary member of the Austrian Academy of Science.

Distinguished Professor Joseph L. Birman was Visiting Professor at the Physics Department of Technion, Haifa, Israel from 20 December 2002 to 4 January 2003. He is carrying out collaborative work there with Professor Ady Mann, of Technion and with Professor Meir Weger (of The Hebrew University, Jerusalem) on theory of "Nearly Ferroelectric Superconductors."

Professor Michio Kaku continues to produce his nationally syndicated, hour-long radio show, which now airs in New York, Los Angeles, Seattle, San Francisco, Tampa, West Hartford, Mendicino, the national KU satellite band, and also the internet. It can be heard on WBAI-FM on Wednesday from 5 to 6 P.M. He appears on Tech TV (a national cable network), the BBC-PBS TV documentary "Copenhagen," and the BBC TV program "Parallel Universes." He also appeared on the video clip at the Einstein exhibit at the Museum of Natural History, and interviewed for the CUNY Matters Newsletter. Next year, he is publishing a new biography of Einstein.

Faculty Outreach Activities

In an effort to promote K-12 science education Professors **Richard Steinberg** and **Seth Rosenberg** hosted approximately seventy 9th graders from Central Park East Secondary School in November 2002. The students participated in interactive physics demonstrations, and learned about force, motion, and buoyancy “in a fun and hopefully educational way,” said Professor Steinberg.

Aleksander Chechkin, a student from Stuyvesant High School, was a semifinalist in the 62nd Annual Intel Science Talent Search (STS). Mr. Chechkin was recognized for his original research entitled, “*Internal Rotational Spectrum of the tryptophan molecule using laser terahertz pulse spectroscopy*,” that he carried out at the Institute for Ultrafast Spectroscopy and Lasers under the tutelage of **Professor Robert Alfano**. Mr. Chechkin will be attending California Institute of Technology next fall.

Physics Club News

In the Spring 2002 semester, members of the Physics Club, accompanied by Professor Frederick Smith visited Brookhaven National Laboratory, a Department of Energy funded laboratory operated by State University of New York at Stony Brook. The trip, which lasted about 8 hours, consisted of a tour of several of the research facilities at Brookhaven including the Relativistic Heavy Ion Collider (RHIC), the PHENIX detector, one of several sites along RHIC’s ring where scientists conduct their experiments, the National Synchrotron Light Source (NSLS), and the Positron Emission Tomography (PET) site. All along the way we met professional scientists and engineers who explained the fascinating research that they were conducting at these sites. From the collisions at RHIC to the study of human addiction at PET, they spared us no details (except the really technical ones). We hope to be planning another trip to Brookhaven soon, but in the meantime we have other activities planned for this semester.

One activity is a trip to the American Museum of Natural History to visit the Einstein exhibit. Lauded as the “most comprehensive presentation ever mounted on the life and theories of the most famous scientist of the 20th century.” Details of the trip are available in the Physics Lounge in Room J421. Also in the works is a trip for amateur astronomers to use

the new Celestron 12” telescope, purchased by the Physics Club in the summer of 2002 through an Auxiliary Enterprises Corp. grant.

(Contributed by Nicholas Merolle. For information or details feel free to contact him by e-mail: nmerolle@sci.ccnycuny.edu)

Recent PhD’s

Kevin Mathias Mertes defended his thesis entitled, “*Distributions of tunnel splittings in quantum tunneling of magnetization in the single molecule magnet, Mn₁₂-acetate*,” in September 2002. His thesis advisor was Myriam P. Sarachik, Distinguished Professor of Physics. Dr. Mertes is pursuing his postdoctoral research with Professor Sarachik.

Yongwei Song defended his thesis in September 2001. The title of his thesis is, “*Thermal oxidation of single crystal 4H- and 6H-silicon carbide*.” Professor Fred Smith was his mentor. Dr. Song is pursuing his postdoctoral research at the Department of Physics, Vanderbilt University.

Huong Nguyen T.Q. graduated in October 2001. Distinguished Professor Joseph Birman supervised her thesis, “*Electronic structure and optical properties of quantum dots*.” She is now a research associate with Professor Birman.

Min Xu received his Ph. D. in October 2001 under the mentorship of Distinguished Professor Melvin Lax. His thesis was “*Optical image reconstruction in highly scattering media*.” He received a Postdoctoral Traineeship Award for his proposal, “*Time-resolved spectral optical breast tomography*,” from US Army Medical Research and Materiels Command. Professor Alfano is his postdoctoral research mentor.

Undergraduate Physics Majors Win Awards

Some of the recent undergraduate Physics students earned prestigious awards for their accomplishments. **Kofi Donnelly** (Class of 2002) was the recipient of a Marshak Award, and the Ward Medal. Marshak Awards are presented by the Science P&B Committee to truly outstanding graduate seniors. Kofi Donnelly received the Award that is based primarily on academic performance. Ward Medal is awarded to the graduating physics major with highest GPA in Physics and Mathematics courses. Kofi is

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Awards (Continued from page 3)

pursuing his graduate studies in Physics at New York University. The other Marshak Award, that takes into consideration contributions of the student to the college and to the community as well, went to **Tarik McMillian** (Class of 2002). Tarik also received the Sonkin Medal that recognizes the graduating physics major who has demonstrated the best performance in the physics laboratory courses. Tarik was enthusiastic about his experience at the City College. "At City College all science programs are great and open amazing opportunities for doing research at the undergraduate level," he added in an interview. Tarik is a graduate student at the University of Central Florida. **David Graybill** received the Gelbwachs Scholarship Award that is awarded in alternate years to Physics and Electrical Engineering majors who demonstrate scientific academic excellence. The scholarship remains in effect as long as the awardee continues in his/her major and maintains a 3.5 average in science, engineering, and mathematics. **Antonino Miano** was awarded the Sidney Millman Scholarship for demonstrating high potential as a junior physics major.

In Memory

Philip Baumel (1932-2002)

Over forty years ago, I first made the acquaintance of Phil Baumel and quickly grew to love him. We first met in what was then the Curricular Guidance Office run by the late Bill Colford of the Romance Language Department, where some half a dozen professors of diverse fields met with students and helped with making curricula and academic decisions. The discussions with the students were frequently intense and long-lived, and took place in almost soundproofed cubicles in the Administration Building on the second floor. There I discovered that he was a true didactic, who the students loved because he taught them physics (rather he dragged them to learning - - it didn't have to be physics). If time was tight you didn't ask him a question, lest he answer it from his massive store. He was both interested in diverse things, and cared about many serious matters. For reasons unknown I was frequently addressed as Phil and he, Bernie, and we alternated positions in the College. After a while I became head of Curricular Guidance and then he. He became head of the Faculty Senate, as I did later. We

were both involved in the Vietnam peace movement. He became Chair of the Physics Department, and worked industriously to improve the curriculum of the College. But unlike most chairs, he was not insular, and his actions were always selected so as to be academically sound rather than self-serving. He was a wise person and honorable, and the faculty always thought of him first when they needed a person to help make smart decisions. He will be missed by all of us who knew him, and I am sorry for those who are now coming on the scene and will not have that opportunity.

Reminiscence of Professor Bernard Sommers, Department of Mathematics, The City College of New York

Melvin Lax (1922-2002)

Melvin Lax, Distinguished Professor of Physics at the City College of the City University of New York died of cancer on December 8, 2002 at his home in Summit, New Jersey. He taught and carried out theoretical research in condensed matter physics, laser physics, coherence and fluctuations in classical and quantum systems, and nonlinear interaction of light and sound in solids.

Melvin Lax was a Charles Hayden Scholar at New York University, receiving the B. A. degree (*summa cum laude*) in 1942. He was a fellow, a teaching assistant, and a research associate at the Massachusetts Institute of Technology, where he received the S.M. and the Ph.D. degrees in Physics in 1943 and 1947, respectively. He advanced from assistant to full professor of Physics at Syracuse University (1947-55) before joining Bell Laboratories, where he served as a Member of Technical Staff (1955-72), Head of the Theoretical Physics Research Department (1962-64), and as Consultant to the Solid State Electronics Research Laboratory (1972-). In 1971, he joined the City College as a Distinguished Professor of Physics and remained there for the rest of his career.

Lax served as a member of the Board of Editors of several international physics journals, such as, the Physical Review, and the International Journal of Modern Physics. He received the Willis E. Lamb Medal of the Optical Society of America in 1999 for his contributions to quantum optics. He provided scientific services to the Naval Research Laboratory, Los Alamos National Laboratory, the U.S. Army Research Office, and the U.S. Department of Energy. He was a member

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Melvin Lax (Continued from page 4)

of the National Academy of Sciences, a Fellow of the American Academy of Arts and Sciences, a Fellow of the American Association for the Advancement of Sciences, and a Fellow of the American Physical Society.

Melvin Lax was a pioneer in the field of "quantum optics". In a comprehensive series of papers on "classical" and "quantum" noise, he obtained definitive results that enabled the separation of the signal from the random noise. This work underlies many aspects of the design of optical communication devices. At the time of his death he was completing two monographs, one on random processes and noise, and the second on modern quantum optics. His life long interest in random processes, applied to different condensed matter systems, led him to analyze how impurities randomly placed in a semiconductor medium, or with random variation of interaction strength will affect the energy levels and hence the conduction properties of the medium. Last few years he was studying the propagation of laser light through "turbid" media such as human tissues, in order to devise non-invasive optical diagnostic tools for breast cancer.

He made major contributions in other areas of physics. He developed a "sub-group" technique to obtain symmetry-related selection rules for physical processes in crystalline solids. His lectures on this topic were published in his book *"Symmetry Principles in Solid State and Molecular Physics"* (Wiley, NY, 1974; reprinted by Dover Publications, NY, 2001). He introduced the concept of "anti-symmetric" microscopic rotations of the atomic constituents to explain the structure of the photoelastic tensor response of a crystal, a problem that eluded solution for more than 80 years. Another topic that bridged his early work on optical transitions in impurity ions in solids to his most recent study of hot-electron transport is the electron-phonon interactions.

Turning to his service to the Physics community, his early work for the American Physical Society as chair of the Publications Committee was instrumental in creating the present systems of electronic submission and processing of manuscripts. He recognized very early the necessity of mastering all aspects of the use of computers in carrying out theoretical physics research.

At City College, Melvin Lax can be described as the "complete and ideal colleague". He prepared his lectures with exceptional care and delivered them clearly to his students. In many of the advanced courses that he taught he prepared extensive and detailed notes, which he photocopied and distributed to the students. He was always available to students, colleagues and co-workers for discussions, and shared his ideas and insights freely and graciously. He served on Departmental, College, and University Committees, such as, the University Committee on Research, and Promotion and Tenure committees. He brought to all these tasks the highest of standards.

Melvin Lax played a key role in bringing the Physics Department at City College to national and international prominence during the 25 years starting in the mid 1970's. All his colleagues share a profound loss of a caring friend and an exceptional scientist, and are deeply grateful to have had the opportunity to work with him during those exciting years in the Department.

A Memorial Program for Melvin Lax was held on Friday, May 23 in the Marshak Science Building Room J418N, the very venue where he presided over the Physics Department Colloquium for years. Gregory Williams, President of the City College, said of Professor Lax: "Melvin Lax will be missed as an outstanding teacher and scholar, and as a kind and caring human being. On behalf of the City College Community, I wish to extend my sympathy to his family, friends, and colleagues." Professor John Hopfield of Princeton University presented a talk entitled, "A Physics View of How Brain Works." Brief reminiscences by a number of Lax's friends, colleagues, and students followed. Jonathan Lax, Melvin Lax's son, led the musical interlude. Dr. Judith Lax presented a moving tribute to her husband and thanked the organizers. The program ended with a reception.

Contributed by Joseph L. Birman, Distinguished Professor of Physics, The City College of New York

Kenneth Rubin (1928-2001)

I want Ken's family to know that Ken always told me how much he cared about them. I feel I know them better than I know about any other colleague. He talked about Josh's research at Albert Einstein, how

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Rubin (Continued from page 5)

much he enjoyed Josh's wedding, the musical show he did at Med School, his tough times as an emergency doctor. He talked about David's musical and artistic work, his illness, and his special daughter. He talked about Judy's little cottage, her dog, her art, especially the fish she did for Legal Seafood. He told me about Teel's devotion to the family, her musical talent, her competence and how much fun they had dancing to the big bands back in the 1950's.

Ken loved City College and hanging out with his colleagues. Even though he taught as an adjunct in the evenings during alternate semesters in New York, he always tried to join the early morning breakfast group (Mike Green, Peter Tea, and Dave Shelupsky), and our lunch group to socialize and to listen to the latest jokes.

Ken was passionate about physics and research. When he could not renew the funding for his experiments, he moved his equipment to Paris where he could join forces with another group at the University of Paris. In order to finance his research, he "retired" so that he could spend at least half of each year working in Paris. Then he returned to New York to continue teaching. He actually worked much harder in retirement than before.

Ken loved to learn new ideas. He was one of the people who very early took up computer control of experiments in physics, and together with Bob Callender, taught our first course on computer interfacing with the venerable PDP-4. He was an early Mac enthusiast, and jumped right in to teach basic computer literacy. He had many ideas about using computers to teach physics, especially statistical mechanics, and even wrote a textbook with Marcel Eminyan (in French) on the subject.

Ken always seemed afraid of not living enough. I noticed it most after he discovered a heart condition in the early 1980's, but instead of taking it easy, he stepped up his activities. When we first visited China around 1986, I asked Ken to rest while the rest of us climbed to the top of a pagoda to see the view. Ken hiked to the top because he wasn't going to miss a thing. He liked China so much that he returned to teach at Xian on a sabbatical.

When roller-skating was all the rage a few years ago, Ken was not going to be left out. He bought a pair of skates and loved to do Central Park and the Seine in

Paris, where he was applauded as he whisked by. I once went skating with him in Central Park, but he was impatient and left me behind. And 2 years ago, when he was over 70, he bought special skates so he could do jumping spins at a skating rink. Unfortunately, he landed in the hospital.

Ken loved to listen to all kinds of music, both classical and jazz, especially the toe tapping or dancing kind. I went with him quite a few times to his favorites, the Cajun Restaurant on 8th Avenue, and the old Red Blazer. Both featured old time Dixieland bands. He had no patience for the more modern "cool" jazz, and his interest stopped after Duke Ellington, which we agreed was our favorite American composer. Ken and I even went to a lecture series on Ellington's music one semester. Ken was charming and warm. He listened attentively to his students and his friends. He was always concerned with other people, not just himself. I will always remember Ken as warm and close friend. We spent much time together over the years, and I miss him dearly.

*Eulogized by Professor Victor Chung, Department of Physics,
The City College of New York*

Bunji Sakita (1930-2002)

Professor Bunji Sakita, Distinguished Professor of Physics, passed away on August 31, 2002 after a yearlong battle with cancer. He was an important figure in the world of theoretical physics, well known for his contributions to a variety of quantum field theory problems in particle and condensed matter physics. The use of SU(6) symmetry in the quark model, the formulation of string theory in terms of Riemann surfaces, identification of supersymmetry, the formalism of collective coordinates in field theory and applications to nonabelian gauge theories, quantum Hall effect, etc., are some of his salient contributions.

The Physics Department, jointly with the Sakita family, organized a memorial day for Bunji Sakita on December 13, 2002, an afternoon of remembrance attended by a number of associates and colleagues from all over the world. Professor Frank Wilczek, Herman Feshbach Professor of Physics, gave a memorial lecture on 'The Futures of Physics.' Professor Antal Jevicki (Brown University) and Professor Susumo Okubo (University of Rochester)

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Bunji Sakita (Continued from Page 6)

eulogized Sakita's contributions to Physics. This was followed by a musical interlude and reminiscences and tributes by a number of collaborators, colleagues, students and family members.

A review of Sakita's work as well as various tributes are on the High Energy Physics website accessed from the Physics Department web page.

Contributed by Professor V. P. Nair, Physics Department, The City College of New York

Transitions

Faculty and Staff

Professor Joel Gersten accepted position as the acting Associate Dean of Science.

Dr. Sergey Vitkalov joined the department as the Muehlstein Assistant Professor in September 2002. Dr. Vitkalov received his MS and Ph. D. Degrees from Moscow Institute of Physics and Technology in 1981 and 1986, respectively. His Ph.D. research involved the study of nonlinear properties of normal metals at low temperature. He held a permanent research position at the Lebedev Physical Institute of Russian Academy of Science from 1986 to 1999. During this period he worked on dynamical quantum properties of low dimensional electron systems. He was involved in low temperature experiments in the area of Quantum Hall Effect at University of Florida during 1997-1998. He joined Professor Myriam Sarachik's group at CCNY as a research associate in 1998 and pursued research on physical properties of strongly correlated low dimensional electron systems in semiconductors at low temperatures. Dr. Vitkalov is setting up a microwave laboratory in the department to study dynamical quantum properties of low dimensional and strongly correlated electron systems and nanostructures.

Professor Vladimir Petricevic returned from special leave in September 2002. He brings back valuable experience and expertise gained in an optical communication company, and plans on expanding his research in that area. He was elected Deputy Chair effective January 1, 2003.

Professor Peter L. Tea, Jr. and **Professor Martin Tiersten** retired in February 2003 after providing long and distinguished services to the department and the City College community. Professor Tea started out as an instructor at the Physics Department in

1957, became an assistant professor in 1961, and rose through the ranks to become a full professor. Professor Tiersten's association with the department also dates back to 1957 when he was a tutor. He became as assistant professor in 1963 and was a full professor at the time of his retirement. We wish them all the best in their new endeavors.

Ms. Megan Gibbs retired from her position as the Administrative Assistant of the Institute for Ultrafast Spectroscopy and Lasers (IUSL) in August 2002. She continues to work part-time for IUSL.

Mr. Linden Langhorne was promoted from Senior College Laboratory Technician to Chief College Laboratory Technician.

Research Associates

Gelu Comanescu joined the Institute for Ultrafast Spectroscopy and Lasers as a research associate in the Fall 2002. He received his Ph. D. in Physics from SUNY Buffalo in 2002, and his B.S. in Physics from University of Bucharest in 1993. His research interests are in optical and electrical characterization of semiconductors; effects of interface bond-type on the electronic and optical properties of semiconductor heterostructures, and optical studies of magnetic semiconductors.

Yeekin Tsui is a new Research Associate in Professor Sarachik's group. He received his undergraduate education from University of Hong Kong and his Ph.D. in Physics from the University of Notre Dame in 2000. His Ph.D. thesis was on geometrically frustrated magnets. He is currently pursuing experiments on two-dimensional system of electrons in silicon inversion layers.

Graduate Students

Sebastien Cormier joined the department as a Ph.D. candidate in the fall of 2002. He intends to do his doctoral work with Professor Richard Steinberg in Physics Education Research.

Henry Sztul started as a graduate student in the Spring of 2003. He is pursuing his research at the Institute for Ultrafast Spectroscopy and Lasers.

New Baby

Ronan Kellow McKinnon son of Tracey Turner and Arlo McKinnon was born on August 18, 2002. Tracey is Professor Herman Cummins' secretary.

Alumni Corner

Alumnus Wins E. O. Lawrence Award

The U.S. Department of Energy honored **Bruce T. Goodwin** (Class of 1972) with its 2003 E. O. Lawrence Award. The award is given in seven different categories for outstanding contributions in the field of atomic energy. It was established in 1959 to honor the memory of the late Dr. Ernest Orlando Lawrence, inventor of the cyclotron (a particle accelerator). Dr. Goodwin received the award in the National Security category for his research on the complex dynamics of the fission triggers of thermonuclear weapons. "Basically what I did was write some equations of state for plutonium under extreme conditions derived from peculiarities I saw in nuclear test data. They looked kind of goofy at the time, but now it looks like they are right experimentally," Goodwin said. "This is a real honor to be given an award named after one of the greats in atomic research." Goodwin is Associate Director for Defense and Nuclear Technologies at the Lawrence Livermore National Laboratory in California. Each winner receives a gold medal, a citation, and \$25,000.

In their own words

"I feel that my training in Physics is my most enduring educational experience, and prepared as best as one can for the rigors and challenges of life."

My Progress

Paul I. Bloom

I graduated from CCNY in January 1971 with a BS in Physics. I received a Ph. D. in theoretical Solid State Physics from the Belfer Graduate School of Science of Yeshiva University in 1977. Subsequently I began working in technology market research, which led to a number of positions in the securities industry from 1979 through 2000 as a technology analyst. I primarily focused on small capitalization technology growth companies and was heavily involved in the Initial Public Offering process for over 10 years. I am now employed at SoftBrands, an application software company which focuses on multiple vertical market. I am the Senior Vice President of Corporate Development involved in acquisitions.

I have been married for 30 years to Meryl Yablonka, another CCNY graduate. We have a daughter, Melissa who is completing her MS in the

Biotechnology area at the University of Pennsylvania. I feel that my training in Physics is my most enduring educational experience, and prepared as best as one can for the rigors and challenges of life. Currently, Meryl and I live in both Manhattan and Northern California.

The Physics Department encourages its alumni to share their educational and professional activities and experiences in this column. The richness and diversity of the careers of our alumni will be instructive and encouraging for our current physics majors. Please send your contributions including your CCNY academic degree(s), year(s) and other pertinent information to: **Physics Department, Room J419, The City College of New York, 138th Street at Convent Avenue, New York, NY 10031**; or e-mail us at physdept@ccny.cuny.edu, or send us a fax at (212) 650-6940.

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