

Physics and Astronomy

Letter from the Chair

Greetings:

It is easy to bemoan the difficult times we live in, and there is no exception for those of us in Physics & Astronomy at Stony Brook—rising tuitions, reduced support from the State, increasing difficulty getting visas, and the eroding federal research support. But when one steps back a little, it seems to me that despite these very real problems, we are truly fortunate to be working at this particular time and place.

In contradiction with recent predictions that physics and astronomy are 'old' sciences, past their glory days in the 20th century, the climate for novel creative ideas and the opportunities for new observations and experiments have seldom been brighter. A hallmark of this is the wealth of questions to which we have no answer, and in some cases no clear leads, and the novel experimental techniques with which we can make incisive new measurements.

The textbook formulations for condensed matter structures have been known for decades; today there are exciting new experimentally feasible systems with which we can create, control and manipulate such structures using lattices of trapped atoms that are analogs of crystalline systems.

The ability to manipulate nanostructures is giving rise to tiny machines and tools of unprecedented sensitivity for measuring forces and torques at the atomic level, aiding our understanding of phenomena as diverse as thin film superconductors and neutrino-less beta decay.

The newest generation of telescopes and sophisticated optical techniques are now offering the possibility for discovery of extra-solar planets that are candidates for non-terrestrial life, as well as the birth of protogalaxies less than a billion years after the big bang.

The opening of the Relativistic Heavy Ion Collider at Brookhaven Laboratory has allowed the creation of new forms of matter at extreme densities and temperatures; the observations show us that a new state is being formed, but one that differs from many preconceived theoretical ideas.

The equation often reads in the other direction with new theoretical ideas that should lead to groundbreaking experimental opportunities. We have some theoretical understanding of how one might construct a quantum computer using states of entangled wavefunctions; today however, we are gaining mastery over real systems in the laboratory with which to explore such computers.

Though progress in understanding how to bring gravity into the quantum field theory fold is arduous and slow, the ideas of string theory now spin off notions such as extra dimensions besides the familiar three, sensed at the nanometer to attometer scale, that should generate observable phenomena in particle experiments.

Continued on page 6



Welcome !

*Two new faculty members joined the department this year **Abhay Deshpande** (above) and **Norbert Pietralla** (below).*

Please see page 7 for more information



Bachelor's Degree Candidates 2003-2004

December 2003

Alisha Cramer
Yoshitaka Yamagata
Meng Yan

May 2004

Sevan Aydin
Stuart Fishkin
Philip Grandin
Taiga Inoue (PHY Minor)
Jason Pawlowski
Amy Roberts
Jude Schneck
Ki Wi Song (PHY Minor)
Anthony Traglia
Chui Woo
Adi Zolotov

August 2004

Eirini Anastasiou (PHY Minor)
Spiro Kartsonis
Sebastian Trujillo

Sigma Pi Sigma Physics National Honor Society 26th Annual Induction

Sevan Aydin
Taiga Inoue
Ian McGreer
Jesse Miner
Aaron Reitz
Anthony Sacks
Ki Wi Song

Awards and Prizes

FACULTY

Axel Drees has been promoted to full Professor.

Miriam Forman, in her capacity as editor of Committee on Status of Women in Physics of the APS, has a lead article in the Spring 2004 newsletter:

<http://www.aps.org/educ/cswp/gazette/spring04.pdf>

Concha Gonzalez-Garcia has been promoted to Associate Professor.

John Hobbs has been promoted to Associate Professor.

Chang Kee Jung's proposal to the Academy of Teacher-Scholars was one of three funded in 2003/04. The Academy was established in 1995 by the University Senate as an engine for educational innovation and to honor and reward excellent undergraduate teaching at Stony Brook. Jung has developed a new course, "The Physics of Sport" with this award.

Janos Kirz has been named interim director of the Advanced Light Source in Lawrence Berkeley National Laboratory starting summer 2004.

Adjunct professor Vladimir Litvinenko of Brookhaven Lab was named an APS fellow.

Emilio Mendez received the Department's Faculty Award for outstanding teaching.

Hal Metcalf was elected Vice Chair of the American Physical Society, Division of Laser Science. He will succeed as Chair of the Division in 2006.

Laszlo Mihaly won the Chancellor's award for Excellence in Teaching.

Peter van Nieuwenhuizen has been named Ridder in de Orde van de Bederlandse Leeuw by the government of the Netherlands. This award for a lifetime achievement is given annually to prominent Dutch citizens and others in all walks of life, and is similar in spirit to the Queen's honors list in Britain. The translation of the award is roughly "Knight in the Order of the Netherlands Lion."

Peter Paul will return to the department in September after a six and a half year term as Deputy Director for Science at Brookhaven National Laboratory.

Norbert Pietralla was awarded the Academy Prize of Physics for 2003 of the Academy of Sciences of Göttingen, for investigations of proton-neutron mixed-symmetry states with the nuclear resonance fluorescence technique.

George Sterman has been named the "2004 Distinguished Alumnus" of the U. Maryland Physics Department.

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| Awards and Prizes |
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STUDENTS

Lilia Anguelova was awarded the Max Dresden Prize for an outstanding theoretical thesis.

Lilia Anguelova, Jiangyong Jia, and Oleg Kritsun received Graduate Council Commendations to Distinguished Doctoral Students.

David Cardoza was selected to attend the meeting of Nobel Laureates in Lindau, Germany.

Xiangyun Chang has been awarded the Di Tian Prize.

Neil Christensen and Leonid Shifrin were winners of the 2004 Peter B. Kahn Fellowships.

Tara Falcone and William Marvin were awarded the Edward Lambe Prize for Science and Teaching.

Bryan Field received the Henry B. Silsbee Prize as an outstanding graduate student.

Alok Gambhir was a recipient of the President's Award to Distinguished Doctoral Students.

Eduardo Gomez received the Soroff Prize for outstanding contributions in physics research.

Rita Kalra has won a Goldwater Scholarship.

Rita Kalra, Jesse Miner, Jason Pawlowski, and Amy Roberts received Undergraduate Achievement Awards for Expanded Learning.

Michael Kiermaier won the Pond Prize for the Highest Comprehensive Exam Score.

Megumi Kinoshita received the David Fox Prize for the best Teaching Assistant.

Oleg Kritsun was awarded the Wilcox Prize for excellence in experimental Ph.D. research.

Myrna Lerotic has won the Gertrude S. Goldhaber Award.

Samantha Roberts received the I-CON Scholarship Award.

Andrew Steiner received the 2004 American Physical Society Dissertation in Nuclear Physics Award.

Chui Yi Woo received the John S. Toll Prize for the outstanding senior.

**Master's Degrees
2003-2004****December 2003**

George Danilov
Jennifer Doebbler
Lucas Finco
Holger Fleckenstein
Tokufumi Kato
Daniel Kerr
Kathryn Krycka
Enrique Moreno-Mendez
Renat Yakupov

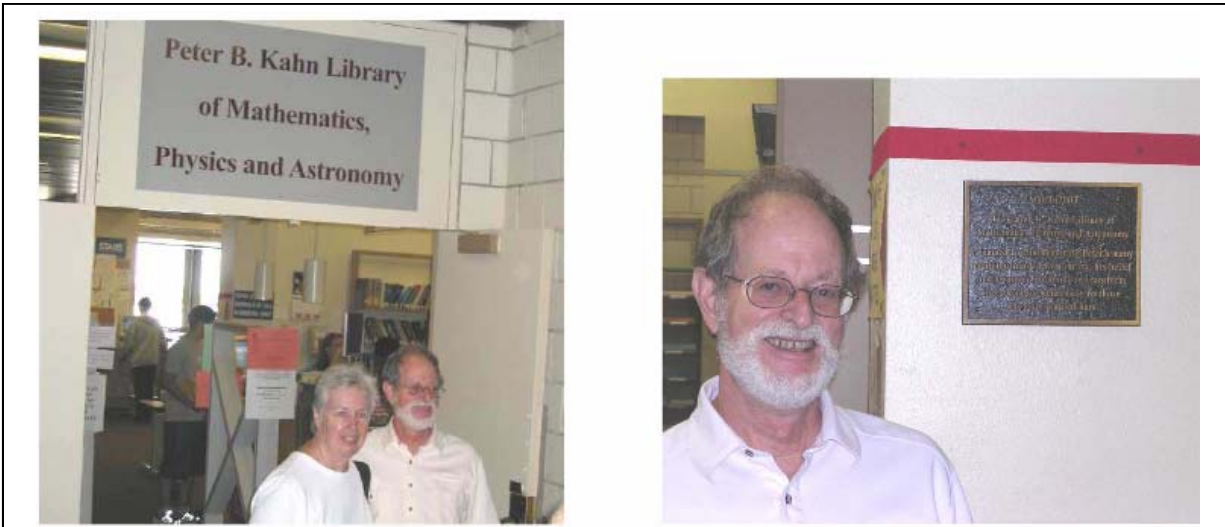
May 2004

Jorge Casalderrey-Solana
Xin Chen
Feng Guo
Jun Guo
Michael Kiermaier
Amina Kinkhabwala
Luigi Longobardi
Claire Shean

MSI Degrees

Babak Azmoun
Susan Metz

Happenings



The former Math, Physics, Astronomy Library was rededicated on September 10, 2003, as the **Peter B. Kahn Library of Mathematics, Physics and Astronomy** "to commemorate Peter's many contributions to the library, his belief in the power of books to transform lives, and his generosity to those who have studied here."

SIMONS WORKSHOPS

A major grant from the Simons Foundation is making possible a series of five month-long Simons Workshops on Mathematics and Physics, sponsored jointly by the C.N. Yang Institute, the Department of Mathematics, and the Office of the Provost. In addition to local faculty and students, the workshops bring junior researchers and leading faculty to Stony Brook, including Cumrun Vafa, Donner Professor of Science at Harvard University, who serves as Scientific Advisor for the Simons Workshops.

The First Simons Workshop, "Matrix Models, Gauge Theories and Geometry", held last summer, was by all accounts a great interdisciplinary success, with nearly fifty guest physicists and mathematicians taking part. The workshop has been acknowledged in over a dozen publications as a stimulant to innovative research at the boundary of mathematics and physics, especially in string theory. One advance growing out of the first workshop was discussed by Vafa in a well-received Provost's Lecture at Stony Brook, on March 31, entitled "Strings, Crystals and the Fabric of Space and Time". An article by faculty members **Martin Rocek** and **George Sterman** describing progress at the workshop will appear in a forthcoming issue of the CERN Courier.

The Second Simons Workshop will be held July 26-August 27, 2004 with the theme "Superstrings and Topological Strings".

NEW FACULTY IN JANUARY 2005

We will welcome two new members of faculty next January.

Adam Durst is presently a postdoc in condensed matter theory at Yale University, working with Subir Sachdev. His research has focused on materials in which interactions and disorder yield new phases of matter, exotic quasiparticles and collective excitations that cannot be understood in terms of intuition on independent electrons.

Dominik Schneble is now a postdoc with Wolfgang Ketterle and David Prichard at MIT. His research has investigated collective light scattering and matter-wave amplification in Bose Einstein condensates, and manipulation of condensates with optical tweezers.

Happenings

PHENIX

This has been an exciting year at Brookhaven Relativistic Heavy Ion Collider and for the Stony Brook group involved in PHENIX—Professors Deshpande, Drees, Hemmick, Jacak. RHIC just finished a long run of Au+Au collisions at full energy, and a survey at lower energy ($E_{cm} = 63$ GeV, instead of 200 GeV).

Over the past year, PHENIX completed analysis of the d+Au control experiment, and found that the striking suppression of jets (sprays of particles from progenitor scattered quarks) seen in head-on Au+Au collisions is totally absent in d+Au. This confirms that the suppression is due to quarks and gluons traversing the hot, dense system formed when two heavy ions collide, and not the properties of the initial state. To understand the color properties of this dense medium, PHENIX is looking at the species dependence of particle production, and has found that the energy loss is much less severe for charmed quarks. Also, more baryons are formed than expected, even in d+Au collisions, and the data suggest that this is because the dense medium modifies how fast quarks and gluons “fragment” into the measured hadrons. Stony Brook faculty Shuryak and Sterman are working to understand how this modification works. The PHENIX collaborations is preparing a paper summarizing how the data may indicate the formation of quark gluon plasma at RHIC.

The next step is to measure the plasma properties, and Drees heads the planning of upgrades to the experiment for this. Hemmick serves as Analysis Coordinator for the collaboration, and Deshpande will be the Run Coordinator for next year’s data taking, dedicated to solving the puzzle of how the quarks and gluons carry the spin of the proton.

On January 30, Barbara Jacak gave a 20 minute interview to the NPR program “Talk of the Nation: Science Friday” hosted by Ira Flatow on the recent studies of ultra dense and high temperature collisions of heavy ions at RHIC. This interesting review can be heard at:
<http://www.npr.org/rundowns/rundown.php?prgId=5&prgDate=30-Jan-2004>

ASTRONOMERS UNDER GLASS

From March 9 to March 14 this year, Stony Brook astronomers joined with Columbia University and the American Museum of Natural History in an extravaganza of analysis of the just-released Hubble Space Telescope “Ultra Deep Field” images. The event, called “Astronomers Under Glass,” was conceived by Stony Brook’s Ken Lanzetta and was held at the Rose Center in the museum. The Hubble data were combed by teams of students and astronomers for diverse phenomena ranging from the search for new very-distant galaxies born less than a billion years after the Big Bang to studies looking for micro-asteroids circling in the solar system. The Stony Brook group managed to get the loan of powerful computers to crunch the numbers from Intel, Apple, Dell and Ion Computers. Each day there were sessions to meet the public and describe the progress of the research, and to provide interviews to the press. Stories covering the event were carried in the New York Times, Wall Street Journal and Science Magazine. In a novel touch, the astronomers managed to convince Panasonic to put images from the day’s studies up on the giant Astrovision screen in Times Square. Information on the event can be found at <http://ultradeepfield.org>, a site set up by Stony Brook’s Center for Excellence in Learning and Teaching.

In addition to analyzing data and stimulating public appreciation for astronomical research, the press conferences touched on the current plans to discontinue servicing the Hubble Space Telescope, thus condemning it to an early demise. And the Stony Brook group used the occasion to publicize its plans for very large, new rotating liquid mirror telescopes that would substantially extend the reach back toward the beginning of the universe, and to seek new donors for those projects. Information on the LAMA project that would harness 18 large liquid mirror telescopes coherently as an equivalent 40 m diameter mirror can be found at <http://lamatelescope.org>

Continued from page 1

And perhaps most tantalizing of all, the observations by astronomers and physicists that there is a form of unseen, unclumped energy in the universe that seems to be gaining the upper hand over gravity and pushing the universe apart. This dark energy density is only 120 powers of ten larger than expected in current theory. Surely a puzzle as monumental as this is likely to provide fantastic opportunities for new understanding!

The students and faculty in the Department are fortunate to be working on these and many other absorbing puzzles. We won't solve them all by ourselves, but we expect to make a big impact. It is a privilege to be working at this time when so many exciting opportunities abound.

There have been changes in the Department this year. The sad news of the death of Dave Fossan and Nandor Balazs is reported elsewhere. The better news is the crop of 23 new graduate students who arrived to fill the places of the 35 who received PhDs in the past year, and the prospects for a large upturn in the class arriving in fall 2004. And this year, two new faculty joined the Department. Norbert Pietralla came from Cologne and has started a new program of study of nuclei in extreme conditions using the Stony Brook linac and various other facilities worldwide. Abhay Deshpande, who joins us from Brookhaven Lab, is leading studies to unravel the puzzle of how the proton's constituents provide its spin.

This past semester, we have been trying to reach as many alumni of the Department as possible. The news you send, some of which is summarized in this newsletter, gives us—and we hope you as well—

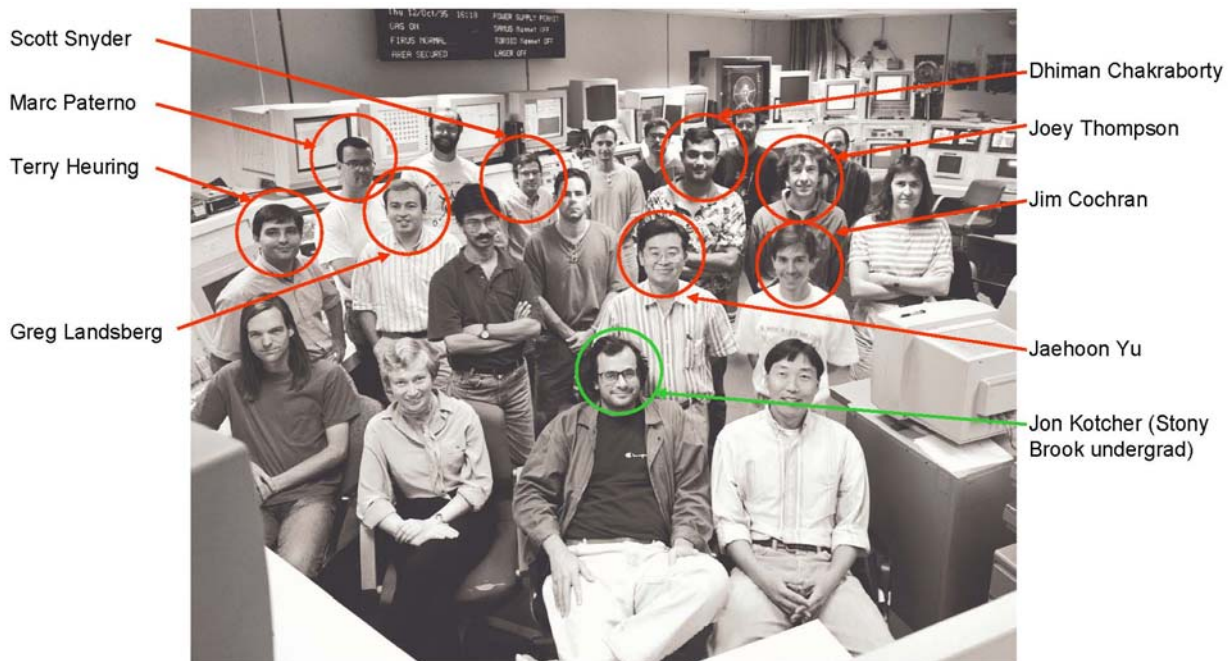
great pleasure. The pride we take in the accomplishments of our students is one of our prime satisfactions. A personal version of this for me is shown in the photograph below, taken at the time of the discovery of the top quark at Fermilab several years ago where 8 of the 20 then-graduate students pictured were from Stony Brook (and one more an undergraduate alumnus); all now are leading their own exciting ventures.

We very much appreciate the generous support that many have given in response to our Fall solicitation. With gifts of over \$25,000, we have been able to significantly improve our ability to provide scholarship aid to students, to assist young faculty in settling in the Stony Brook area, and to improve the quality of life in the Department. Your gifts have softened the impact of the hard times that I mentioned above. Should you feel inspired to join this campaign, see the donation form in this newsletter!

This fall, we have completely revamped our main web pages to give a more dynamic view of the Department's activities. We hope that these will give you a better sense of our far-flung activities. Pay us a virtual visit at <http://www.physics.sunysb.edu/physics/> — or even better, visit us in Stony Brook—and in any case be sure we have your e-mail coordinates.

I hope that all of you find the excitement and pleasure in your activities that we feel in Stony Brook. Although it is easy to complain about how hard times have become, in reality we have been given the pleasant curse of living in exciting and rewarding times.

Paul Grannis



Welcome

In December of last year, **Norbert Pietralla** joined the Department as an Assistant Professor of Physics. Norbert received his PhD from the University of Köln in 1996, and has held visiting positions in RIKEN, Japan, and Yale University, and an appointment at the University of Köln. Norbert also recently received the 2003 Physics Prize of the Academy of Sciences in Göttingen. At Köln, Norbert held a prestigious Emmy Noether Fellowship. The fellowship, named after a noted German mathematician, was intended to provide a "fast-track" for bright young German scientists to be integrated into the more rigid university research structure in Germany, but in his case we have instead succeeded in attracting him to come join the Department here at Stony Brook.

Norbert's research is broadly centered in Nuclear Physics, where he is an expert on proton-neutron asymmetric multi-phonon states of nuclei, and quasi-deuteron states in nuclei. He has just received an NSF grant for their study, and already begun to develop a research program that will use the superconducting LINAC in the basement of the physics building. Norbert has initiated another research effort to utilize the intense photon beams available at the Duke Free Electron Laser, to excite interesting nuclear levels with photo-excitation reactions. This new technique opens up an unprecedented level of accuracy and sensitivity in various aspects of nuclear gamma-ray scattering experiments and will enable deeper insight into the dipole response of nuclei at the particle emission threshold. Norbert has many new projects that will make excellent PhD theses, and is interested in discussing them with potential graduate students.

Norbert and his wife and two children live in the Stony Brook area. Norbert is an avid windsurfer, and he and his family are looking forward to the summer. (Aren't we all!)

We are delighted to welcome Dr. **Abhay Deshpande** who joined the department as an Assistant Professor at the start of the Spring 2004 semester. Abhay works in the expanding field that links heavy ion physics and particle physics, studying the properties of the strong nuclear force in regions of the extremes of high density and short distance. Abhay will hold a joint appointment at Stony Brook and as a RIKEN-BNL Center fellow over the coming five years.

Abhay earned the Ph.D. in 1995 from Yale University, studying rare decays of the charged K mesons. During his postdoctoral appointment, also at Yale, he switched his attention to probing the structure of the proton using lepton beams from accelerators at DESY in Hamburg and CERN in Geneva. This research brought into focus the puzzling fact that the proton's spin is not built from the spins of the constituent quarks, leaving open the possibility that the gluons that carry the strong force between quarks may be responsible.

Since 2000, Deshpande has been a fellow at the RIKEN-BNL Research Center, working on the PHENIX experiment at RHIC and laying plans for new future opportunities using the RHIC complex. The first of these new directions has now begun with RHIC operating with polarized protons in both the colliding beam rings. Using polarized proton collisions and studying the production of heavy quarks, photons and quark jets, he hopes to unravel the proton spin puzzle. Abhay has served as a spokesman for a proposal to build an electron accelerator that would provide polarized electron-polarized proton collisions at RHIC. This facility, which would give new and powerful tools for unraveling the quark and gluon composition of the proton, might be expected to start in ten years or so.

Farewell

Nandor Balazs, Professor Emeritus in the Department of Physics and Astronomy, passed away on August 16, 2003. Dr. Balazs came to Stony Brook in 1961 when the University and Department were just taking shape. He gave stature and rigor to the Department during those early years and helped form the Department with his eclectic style and broad range of interests. Although Dr. Balazs retired from Stony Brook in 1995, he remained active until the time of his death.

Our dear colleague and friend **David Fossan** died July 27, 2003 of a heart attack while swimming at Fire Island. David had been a member of the Department of Physics & Astronomy since 1965. He was a founder of the experimental nuclear physics group at Stony Brook, and a major force in creating the Nuclear Structure Laboratory in the late 1960's. This group helped establish Stony Brook's world front-rank reputation in physics. He was a leader in investigating the properties of nuclei in extreme conditions of high spin and deformation. His recent research on pairs of nuclei that are mirror images of one another gave important new insights on the nature of the fundamental nuclear force. In recognition for his outstanding research career, he won the inaugural Chancellor's award for excellence in research and scholarly activity in 2002. He often served as advisor to national laboratories, and held visiting appointments in this country and abroad. He was a Fellow of the American Physical Society, and served on the executive committee of its Division of Nuclear Physics.

2003-2004 Ph.D.s

Tobias Beetz

Soft X-ray Diffraction Imaging with and without Lenses and Radiation Damage Studies (Jacobsen)

Yiing Rei Chen

Theory of Two Perovskite Solid State Systems (Allen)

Nathan Clisby

Negative Virial Coefficients for Hard Spheres (McCoy)

Alok Gambhir

Peptides Corresponding to Basic/Hydrophobic Regions of Proteins Laterally Sequester the Multivalent Acidic Lipid PIP₂: A Mechanism (McLaughlin—Physiology & Biophysics)

Gary Gluckman

Optimization of Dosimetry Techniques for 3D Conformal and Intensity Modulated Radiation Therapy (Reinstein)

Loic Grandchamp

Charmonium Production in Heavy-Ion Collisions (Rapp)

Athans Hatzikoutelis

Search for a Massive Short-lived Axion in Nuclear Transitions (Paul)

Tibor Kúcs

QCD Resummation Techniques (Serman)

Peter Langfelder

Studies in Gravity Localization on Branes and De Sitter/CFT Correspondence (Rocek)

Tifang Li

Quantitative Reconstruction for Brain SPECT with Fan-beam Collimators (Stephens)

Matthew Malek

A Search for Supernova Relic Neutrinos (Jung)

Jaen Mannik

Quasiparticle Poisoning in Charge Qubits (Lukens)

Tevfik Mentis

Imaging Magnetic Domains using Resonant X-ray Scattering (Kao)

Kevin Schultz

Resonances in H Atoms in Collinear Linearly Polarized Microwave and Static Fields (Koch)

Diyar Talbayev

On the Far-Infrared Spectroscopic Study of the Electron Spin Resonance in LaMnO₃ (Mihaly)

Zhongmin Wang

Search for Supersymmetric Particles (Rijssenbeek)

John Wilson

Polarization Dependence of Microwave Ionization of Hydrogen (Koch)

Valeriu Zetocha

Applications of Instantons to Hadronic Processes (Schaefer)

Congratulations

Five *Intel Project* semifinalists (out of 300 nationwide) were supervised by members of our Department. They are:

Yiyi Deng (Metcalf/Noe), Maanit Desai (Metcalf/Noe), Ahmed Mallik (Zahed), Oleg Polyakov (Metcalf/Noe), and Eduard Reznik (Lattimer).

Reznik was subsequently chosen as one of 40 finalists and received 5th place overall for his paper "New Exact Solutions to Einstein's Equations" that gives astronomers a better understanding of a star's internal structure.



Thank you!

At time of writing, the Departmental annual campaign has netted over \$25,000 in support of activities of the Department ranging from fellowships and prizes to funds for new faculty housing loans. More major gifts are still being discussed. We are extremely grateful to all who joined in giving to our Department; our programs are much enhanced as a result.

*It's not too late to join in supporting the Department!
Send us your donation with the form below, or visit
<http://www.physics.sunysb.edu/Physics/donate.shtml>*

✂ detach here

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| <p>Credit Card Charge Authorization</p> <p>Donor Name: _____ Date: _____</p> <p>Address: _____</p> <p>City: _____ State: _____ Zip: _____ Country: _____</p> <p>Home tel: _____ Business tel: _____</p> <p>Card Type: VISA <input type="checkbox"/> MASTERCARD <input type="checkbox"/> AMEX <input type="checkbox"/> DISCOVER <input type="checkbox"/></p> <p>Credit Card #: _____ Exp. Date: _____</p> <p>Cardholder's Signature: _____</p> <p>Gift Amount: _____ SBF Account: _____ <small>(see list of accounts)</small></p> | <p>Checks</p> <p>should be made out to the Stony Brook Foundation of your Choice (see list below).</p> <p>Please return this form or check to:</p> <p>Pam Burris Dept. of Physics & Astronomy Stony Brook University Stony Brook, NY 11794-3800</p> |
| <p>Accounts</p> <p>284420 Chair's Account to support activities in the department (not endowed)</p> <p>353480 Book Prize for purchase of books for undergraduates</p> <p>264100 Education Fund for undergraduate and graduate scholarship awards</p> <p>362390 Endowment Account to support activities in the department</p> <p>297420 Faculty Mortgage Assistance Account to make housing loans to faculty</p> | |

Where Are They Now?

Pierre Bierre (Peter Beers) B.S. 1972, is self-employed, doing Smart Product Design in Pleasanton, CA.

Carol Hall, Ph.D. 1972, is a faculty member of the Chemical Engineering Dept. at North Carolina State University.

Mauricio Fortes, Ph.D. 1973, "spent last year at the National Assessment Center during my sabbatical, which is the equivalent of the Education Testing Service (College Board, SAT examinations) in Mexico. I have been fascinated in this work as it provides quite an interesting set of statistical data on education in Mexico. Now I am still keeping a part-time position there while I have returned to study a Bethe-Salpeter approach to superconductivity at the Institute of Physics [Universidad Nacional Autonoma de Mexico]".

David Diner, B.S. 1973, is currently a principal investigator on the MISR project at JPL.

Bill Weng, Ph.D. 1974, is head of the Center for Accelerator Physics at Brookhaven National Lab. He has been elected a 2004 Fellow of the Institute of Electrical & Electronics Engineers, Inc. (see the Feb. 6, 04 issue of the BNL bulletin for more detail).

Mason A. Gross, B.S. 1977, is a patent attorney in Houston, TX. He writes "I have a Ph.D. in electrical and computer engineering. I have a wife, Carol, and three children, Sarah (11), Alex (9), and Daniel (4). I enjoyed Stony Brook and I have marveled at its growth and beautification since I was there."

Sandy Shaw, M.S. ABD 1978, was recently named Vice President, Fractal Technology, of Health Discovery Corp. in Waco, TX.

Rahul Basu, Ph.D. 1984, is a Professor at the Institute of Mathematical Science, working in HEP. He continues to do QCD, which is what he did his thesis in with George Sterman.

Li Hua Yu, who earned both an M.S. and Ph.D. in physics at Stony Brook University in 1980 and 1984 respectively, won the 2003 Free Electron Laser (FEL) Prize, sponsored by the 25th International Free Electron Laser Conference. Yu, a physicist in the National Synchrotron Light Source Department at Brookhaven National Laboratory, was given the award "in recognition of his outstanding contributions to FEL science and technology".

Dubravko Klabucar, Ph.D. 1986, writes: "In 2001 I was elected for a full professor at the Physics Department of the Faculty of Science of Zagreb University (where I have been since 1992). I am currently serving as the vice-chairman of the Physics Department. The Schwinger-Dyson studies of mesons are still the focus of my physics research. My wife Ana gave me another child in 2000, so I now have four, a girl and three boys: Nina, Vlatko, Boris and Ivan."

Keith Noll, Ph.D. 1987, was the winner of the 2003 Astronomical Society of the Pacific Klumpke Roberts Award recognizing outstanding contributions to the public's appreciation of astronomy.

David Appell, Ph.D. 1988, writes "After a few years working for Bell Labs and for MCI, I struck out as a freelance writer — for the past 7 years I've been a science writer, one year for a magazine called Laser Focus World, 6 (almost) years as a freelance science journalist. My work has appeared widely — in Scientific American, New Scientist, Popular Science, Audubon, Nature, Science, Wired, Salon, and many other publications."

Gabor David, Ph.D. 1991, is a Physicist at Brookhaven National Lab.

Gautam Dev, Ph.D. 1993, is in Florida working for the government.

Karl Kusche, MS 1993, MA 1994, writes: "After graduation from the MSI program, I remained at BNL's Accelerator Test Facility with the Inverse Cherenkov Acceleration Experiment collaboration as a physics researcher and project coordinator. This experiment eventually evolved into the successful Staged Electron Laser Acceleration Experiment (STELLA, where we demonstrated the world's first staging of laser wiggler-based accelerators. I am still with the STELLA collaboration at ATF, which plans to explore staging of laser wakefield-based accelerators as the next step table-top systems. In 2001, I responded to the World Trade Center on September 11 as a volunteer Paramedic with my wife (also a Paramedic). We both continue our 20+ year history of volunteering for several local ambulance/fire Departments, including currently serving as Assistant Chiefs of East Moriches Ambulance. Thoughts about past USB Experience: Dr. Metcalf's MSI program was perfect for the broad level of expertise I desired in my field, and USB's

Strong connection with BNL enabled my entry into the facility that I had long dreamed of.

 Daniel Koller, Ph.D. 1994, is a physicist with the National Radio Astronomy Observatory in Charlottesville, VA.

 Tilo Wettig, Ph.D. 1994, is a Professor at the University of Regensburg, Germany.

 Steven Wiles, Ph.D. 2000, is an Assistant Professor at Gonzaga University.

 Mikhail Kopytine, Ph.D. 2001, is a Postdoc at Kent State University, working at Brookhaven National Lab.

 Vasili Perebeinos, Ph.D. 2001, is working in the Nanoscale Science and Technology group at the IBM T.J. Watson Research Center, working on a theory for carbon nanotubes, nano-electronic devices.

 Chunmei Tang, Ph.D. 2001, married to Zhong Zhong, Ph.D. 1996, writes: "Our two daughters, Joy and Jenny, were born when we were in graduate school. We still remember the help and love we got from our friends in the Physics Dept. After graduation, I've been at home, taking care of the family, learning English and music with the kids—growing up with them. I also translated a parenting book "Joyful Child" into Chinese. It will be published in China soon. I am going to pursue a physics-related career later."

 Andrew Steiner, Ph.D. 2002, has won the APS Division of Nuclear Physics 2004 Ph.D. Dissertation Award.

 Jay Dickerson, Ph.D. 2002, has accepted a tenure-track position as an Assistant Professor at Vanderbilt University.

 Michael Feser, Ph.D. 2002, is developing X-ray imaging instruments for the semiconductor industry and for R&D in industry and research institutions. "Stony Brook, and especially my work at Brookhaven Natl. Lab. trained me very well."

 Prashanth Jaikumar, Ph.D. 2002, is doing post-doctoral work in nuclear theory and applications to cosmology at McGill University, Canada. He writes: "In retrospect, the Nuclear Theory Group at SB is even better than I thought, and I thought it was already pretty good!"

 Robert A. Wlodarczyk, B.S. 2002, is a Software Design Engineer with Microsoft in Redmond, WA, and was one of two U.S. winners of the Microsoft Imagine Cup competition. He writes: "Thank you for a wonderful undergrad experience! My memories of being a Physics student are the greatest!"

Habitat for Humanity

Fund-raisers extraordinaire!

Under the inspired leadership of Elaine Larsen and Maria Hofer, (seen here with drawing



prizes —just one of their fund-raising ideas) the Department raised \$1,600 for *Habitat for Humanity*.

Many thanks to all who contributed, and a special **Congratulations !** to Elaine and Maria for all their hard work.

Stony Brook University is an AA/EOE educator/employer.



Physics and Astronomy Department
Stony Brook University
Stony Brook, New York 11794-3800

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