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B R Y N M A W R

January 1, 2005

Dear Alumnae and Alumni,

Greetings! We hope this newsletter finds you well. This year we welcome two new members to the department, Aaron Marks, our new Keck Postdoctoral Fellow, and Tsvetelin Tsankov, a new adjunct professor helping us cover courses while Al Albano is on leave. Tsvetelin is a recent graduate from Bob Gilmore's Nonlinear Dynamics group at Drexel University, and has hit the ground running handling two courses and the P214 lab his first semester. Aaron has come to us from the Physics Department at Lehigh University where he completed his dissertation in John Huenneken's Atomic Physics group.

This past year we have had excellent visits from outside speakers. Jordan Goodman from the University of Maryland's Physics Department came and gave an exciting colloquium on the latest evidence for the accelerating expansion of our universe. Jim Gates, also from the University of Maryland, visited last Spring to tell us about the latest theoretical efforts to unify the fundamental forces and specifically, the latest prospects of string theory. Dave McGee (Ph.D. '95) spoke on his new research investigating electro-optic polymers for applications in integrated optics. We also got into the election spirit by hosting a panel discussion of science issues in the 2004 election with Stephen Berry from the University of Chicago and John Holdren from Harvard University.

This term the Department hosted a visit from Barbara Whitten from Colorado College who has an NSF grant to investigate the role of women's colleges in educating women physicists. Her team visited campus to interview faculty, students and college administrators to discover what factors contribute to the success of women's colleges in producing women physicists. Look for their report to come out in Spring of 2005.

We have four seniors and six juniors this year. One senior is away at CalTech in the 3-2 engineering program and one junior is abroad at St. Andrews University in Scotland. There are eight students in the second year course, including one freshman. And sixteen out of the 38 enrolled in P103, Foundations in Physics, are freshman this year. The numbers are looking up again! As usual, students participated in research on campus and elsewhere this past summer, one on campus and three else where, working in such areas as atomic force microscopy, frozen Rydberg gases, pressure sensor technology and the transit of Venus.

For the third year, our current graduate students, Tom Carroll and Bob Ekey joined their colleagues from the other science departments to present their research in a Graduate Student Research Symposium sponsored jointly by the Center for Science in Society (<http://serendip.brynmawr.edu/local/scisoc/>) and the Graduate School of Arts and Sciences. This symposium continues to allow graduate students from all the science departments to share their work with each other and the community. Bob Ekey is beginning his second term as Co-Chair of the Graduate Student Association on campus and he has been active in promoting the Graduate School of Arts and Sciences programs. Graduate students in the sciences including Bob and Tom continue to run a monthly student journal club with graduate students from each department choosing and leading the discussion of the latest results in their fields.

Peter Beckmann has returned from a productive leave during which several papers were published in chemical physics and condensed matter journals. His research both at Bryn Mawr and at the Department of Chemistry at the University of Delaware is progressing nicely. At Bryn Mawr, he now does fluorine-19 solid state nuclear magnetic resonance (NMR) as well as solid state proton NMR. Over the next three years Peter and a colleague at Delaware will receive 0.3 M\$ from the National Science Foundation to investigate quantum mechanical dynamics in heavy metal salts; compounds like lead nitrate where the core lead electrons are relativistic. Peter is also engaged in an intriguing experiment in the introductory physics laboratory this term. You may recall his urgings that we transform the intro labs by setting up 26 different experiments and the letting the students loose. Well, he has done just that and early reports are very good. The students (and the T.A.s who have to learn many experiments!) are having a lot of fun.

Al Albano is on leave this year but still continues his collaboration with Peter Brodfuehrer at the Biology Department and with Paul Rapp at the Drexel University Medical School and Chris Cellucci (Ph.D. '98) at Ursinus College. He is the proud grandfather of a now one-year-old grandson, Gavin, and last May, he sent Steve Hess on his way with his Ph.D. Rumors are that Al is taking Chinese in preparation for an extended visit there at some future time, and his retirement is in the works. We will keep you posted!

Liz McCormack is serving her third year as Chair and working with Bob Ekey and Aaron Marks, the new Keck Postdoctoral Fellow in her lab. Having installed a new laser system, they have been doing multiphoton experiments combing light in the near UV with two other visible lasers to look at the structure and decay of highly excited states in molecular hydrogen. Liz has been active with PKAL this past year and will continue to be so as a Co-PI on their new NSF grant to partner with institutions committed to improving STEM education. Bryn Mawr is one of the partnering institutions and a group of science and mathematics faculty have come together to plan how to make the student experience of science at Bryn Mawr more integrated and to promote interdisciplinary study and research on campus. New curricular elements in computational skills are an area that Physics in particular, is interested in developing.

Michael Noel's research on dipole-dipole interactions between highly excited atoms in an ultracold vapor has been yielding very interesting results. Graduate student Thomas Carroll recently finished a numerical analysis of their first results, which were just published in Physical Review Letters. Tom runs his calculations on the new Beowulf computing cluster that they build last winter in collaboration with Doug Blank from Computer Science. Michael also has two undergraduate students working in his lab. Sabastian Mankowski from Haverford is constructing a new trap with which they hope to arrange a few atoms in a well-defined pattern. Shubha Sunder, a senior undergraduate and Marshall Fellow from Bryn Mawr, is investigating the transition between two-atom and many-atom interactions as she varies the density in a narrow column of atoms.

Returning this year from leave, Mike is also teaching for the first time a new course P109 called How Things Work a one-semester physics course for non-science majors. The majors continue to join Mike in his "Ball of Physics" outreach program which is developing and delivering a physics demonstration show for local schools. On January 22, 2005, in celebration of the World Year of Physics, they will host an event in Thomas Great Hall, which will include a big show along with lots of hands on demonstrations to explore. Stop by if you're in town.

Mark Matlin is having fun teaching Modern Physics (P214) for the first time ever, and Statistical Physics for the first time in eight years. He's also having fun helping out in the new-format introductory lab, where many experiments are in use simultaneously. He's having less fun fixing up the house he bought over the summer. Entropy had a head start, so it's an uphill fight, but some battles have been won. Others will be fought (and, he hopes, survived) by the end of 2004. His research (on neuroscience-based image analysis) has been on the back burner since the beginning

of the semester, but he anticipates making some progress over the winter break, and especially during Summer 2005.

Ann Daudert continues to keep the department running smoothly. She coordinates the “we hear that section” of the Newsletters so please keep her up-to-date on what is happening with your careers. Mary Scott regularly drops in to join the over-60 crowd for lunch. More news and pictures are at our new departmental web page, <http://www.brynmawr.edu/physics>. Let us know what you think of it.

This Newsletter is being emailed to everyone who has a BMC alumnae/i email address and sent hardcopy to the rest of you. You can help us save on postage and stay in touch with the college by setting up an email account with the BMC Alumnae office.

We hope you will continue your financial support for the College’s programs, especially during the campaign for the Plan for a New Century <http://www.brynmawr.edu/visit/plan.shtml> which includes several goals for women in science. Support for the general funds of the College gives maximum flexibility to direct resources to buildings, faculty, financial aid or programs. However, if you wish to restrict your contributions to support programs in physics, we urge you to consider contributing to the endowment of the Marion Reilly Chair (the partially endowed professorial position held in turn by Walter Michels, Rosalie Hoyt, and Alfonso Albano), to the Helen Schaeffer Huff Fund which provides income to support a postdoctoral position that alternates between the physics and chemistry departments, to the Anna Pell Wheeler Fund which supports the department’s colloquium series, or to the Physics Mentoring Fund which was seeded by the mentoring award given the department by the White House in 1998.

Thank you all for your support and continued interest. We look forward to hearing your news!

Sincerely,

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We hear that.....

We apologize if any of the following information is 'old news' or if it has any inaccuracies. If corrections are needed, please let us know. The Alumnae Office emails this Newsletter, please make any email address changes through their office.

Al-Hallaq, Hania ('94) obtained her Ph.D. in medical physics from the University of Chicago in 2000 followed by a 2-year physics residency in the Radiation Oncology Department at the University of Chicago. She is now employed as a Medical Physicist at Lutheran General Hospital in Park Ridge, IL.

Allen-Mirzayan, Adrienne ('94) moved to Albuquerque where she just got a job at Ball Aerospace. **Allocco**, Elizabeth ('02) co-authored a paper with Peter Beckmann (and other physics majors from the following year) called "The relationship between crystal structure and methyl and *t*-butyl group dynamics in van der Waals organic solids." It was published in the Journal of Chemical Physics.

Brereton, Jennifer ('90) after working as a software developer on Wall Street for ten years, has retired to volunteer at her son's school. She is keeping very busy as Director of Alumni Affairs (her Alma Mater also), editor of Alumni Newsletter and moderator for the student newspaper.

Hasan, Nishat ('03) is an Associate Economist for the Federal Reserve Bank of Chicago. She thanks the physics department for all of the math she learned and for forcing her to learn LaTeX, these were important credentials for landing her position. She still plans to go to graduate school in a few years.

Das, Biman (Ph.D., '88) has been promoted to Full Professor at SUNY Potsdam. In addition to teaching, being department chair, and continuing his research on laser physics, he has written a couple of books aimed at helping introductory physics students.

Engler, Emily ('01) is happy to be back in Boston where she is doing data validation for an oncology group working to make cancer treatments more effective.

Herd, Maria ('02) co-authored a paper with Peter Beckmann (and other physics majors from the following year) called "The relationship between crystal structure and methyl and *t*-butyl group dynamics in van der Waals organic solids." It was published in the Journal of Chemical Physics.

Hess, Stephen (Ph.D., '04) received his degree in May. He worked on his dissertation, "Dynamical Systems Model for Nuclear Power Plant Risk," under Al Albano's supervision. A paper describing part of his work was recently accepted for publication by the journal *Reliability Engineering and System Safety*.

Iwata, Christina ('93) is tutoring students and continuing to teach "Secondary Science Methods" at the University of Delaware.

Kuranz, Carolyn ('02) co-authored a paper with Peter Beckmann (and other physics majors from the following year) called "The relationship between crystal structure and methyl and *t*-butyl group dynamics in van der Waals organic solids." It was published in the Journal of Chemical Physics.

Lau, Eileen ('95) continues to work as a management consultant at McKinsey in California.

Larese, Sandy ('96) finished her Master's degree in Science Education in 2003 (with teaching certification in physics). She recently wrote an advanced science curriculum with a grant from the Javits Foundation called Project Logged On at the University of Virginia and she is currently enrolled in the Ph.D. program in educational psychology with a specialty in gifted education (focusing on instructional technology and girls'/minority students' pursuit of science/engineering degrees).

McGee, David (Ph.D. '95) visited us in October to give a colloquium, "Electro-Optic Polymers for Integrated Optics and Holography". He says he is enjoying both teaching and doing research at Drew University where he is an Associate Professor.

McNaull, Aline ('03) has a position as a multi-discipline engineer with Raytheon in Santa Barbara. Her first assignment deals with improving the quality of wafers used for focal plane arrays.

Mehrmanesh, Laura ('01) has just started the graduate program at Brown University. She is working as a research assistant in Jimmy Xu's lab.

Nihei, Taryn ('97) received a MS degree from the University of Pennsylvania in 2000; worked as a consultant 2001-2002; and is now enrolled the Ph.D. Astronomy Ph.D. program at Penn.

Ohashi, Kyoko ('95) is doing her post-doc at Dalhousie University's Department of Oceanography. She received her Ph.D. in May in Marine Sciences at SUNY Stony Brook.

Paty Carol ('01) is working hard on her research in the Earth and Space Sciences at the University of Washington. She has given talks on campus and did a presentation this summer at a conference in Montreal. She co-authored a paper with Peter Beckmann (and other physics majors from the following year) called "The relationship between crystal structure and methyl and *t*-butyl group dynamics in van der Waals organic solids." It was published in the Journal of Chemical Physics.

Ramond, Tanya ('94) started working at Ball Aerospace in Boulder as an optical engineer.

Stefaniw, Eliza ('94) recently graduated from Georgetown with her JD. She is working as a patent agent on her own and doing some more work at the Naval Research laboratory on a contract basis with Technology Transfer.

Stellman, Emma ('97) has accepted a fellowship to write an application for a Community Charter School of Cambridge, MA. CCSC is a tuition-free, public charter school for grades 7, 8 and 9 and will open its doors September 2005.

Terrell, April ('01) has recently moved back to the DC area to work as a science learning specialist at the Learning Resource Center of Marymount University in Arlington, VA.

Class of 2004

Aye, Thida is at Oxford on a one-year program in Statistics (2004-05). She goes to MIT in Fall '05 to start on a Ph.D. program in Applied Mathematics.

Laidman, Sierra is working at the Museum of Science in Boston. She is designing and presenting shows for museum visitors. Eventually she hopes to work on an exhibit development project s with middle school or high school groups, and perhaps doing curriculum development. She loves it.

Leonard, Adrienne is at the physics department at Drexel starting on an Astrophysics Ph.D. program.

Rachmeler, Laurel moved to Boulder after graduation this summer where she did research at the Southwest Research Institute, looking for waves in the sun's corona. Presently, she is enrolled in the Ph.D. program in Astrophysics and Planetary Sciences at the University of Colorado.

Nordstrom, Kerstin is also in the neighborhood, having started on a physics Ph.D. program at Penn.

Rosenberg, Jessie has started on a Ph.D. program in physics at CalTech.

Vaughan, Jennifer is off to Cornell on a Ph.D. program in Theoretical Physics

Summer Research of current majors

Anane-Fenin, Ekua ('05) was awarded an APS/IBM summer fellowship which she spent at IBM San Jose (CA) before proceeding to Pasadena to start the Caltech part of her 3-2 engineering program. Last summer ('03) she did research on Design, Construction and Testing of a High Voltage Switch for Striking an Electric Discharge in a Parent Molecule with Liz McCormack at Bryn Mawr.

Gaydosh, Kayla was in Greece this past summer watching not the Olympics but the transit of Venus with a group of students led by Jay Pasachoff from Williams College. In the summer of 2003 she did research on "The Evolution of T-Tauri Stars" at Wesleyan University.

Kelsall, Sarah ('06) worked at the New Jersey Institute of Technology on developing "An MRI Compatible Pressure Sensor."

Pouy, Rebecca did research at BMC in the summer of 2003 on Astrophotography at BMC. This past summer she spent part of the time traveling and teaching English in China.

Smith, Hillary was in sunny California this past summer working at Harvey Mudd College characterizing lipid bilayers using atomic force microscopy.

Sunder, Shubha stayed on campus to start her Marshall Fellowship research on atom trapping with Michael Noel. Shubha also did summer research in the summer of 2003 at BMC using nonlinear dynamical techniques to analyze electrophysiological data from the leech.

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NAME _____ **CLASS YEAR** _____

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CURRENT JOB TITLE _____

CURRENT EMPLOYER _____

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EDUCATION AFTER GRADUATION AT BRYN MAWR

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