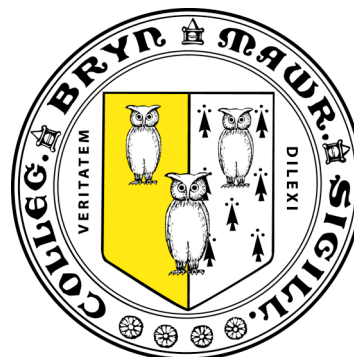


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Bryn Mawr College Physics 2010 Newsletter

July 2010

Hi Everybody:

It's time for an update! Lots has happened since our 2007 newsletter. There have been some exciting developments and the department continues to grow. On this website you will find two new documents. The first, "Faculty History," lists the faculty members who have served in the Physics Department since the beginning of time. The second, "Major by Year," is the umpteenth draft of all physics majors since the beginning of time. There is still a lot of work to do on the latter document. Please send me (pbeckman@brynmawr.edu) corrections for both documents. A third document, an easy-to-read list of all the graduate students since the beginning of time, is well under way. Stay tuned.

My wife, Hillary, and I hosted a reunion party on reunion weekend (30 May 2010). We started about noon on the Sunday when the college festivities ended and everybody had an afternoon of fond memories and getting back in touch. It was wonderful to see so many physics undergraduate and graduate alums and faculty members from years past. There were about 40 people there. Some of you may remember these parties from earlier epochs. I hope I have the stamina to do it again May 2011. I realize that potentially reuniting undergraduates need many months advance warning so they can delay their Sunday flight by several hours.

It's fun being at the college these days. We face many of the same financial and quality control challenges that so many educational institutions face but as women's colleges fall by the wayside nationally, we retain our "academic sister" national reputation. Mary Patterson McPherson (president 1978 to 1997) use to say that she looked forward to the time when women's colleges would no longer be necessary. I note that PhD's awarded to women in physics remain at about 15% of the total and that many come from women's colleges. That hasn't changed for about 25 years. What do you think? Are just a few disciplines, one of which we don't have - engineering - a good enough reason for society to continue with women's colleges?

Our secretary Ann Klingensmith <aklingensm@bryn-mawr.edu> started four years ago. And she's still here! Ann is also the secretary for the Department of Computer Science which now has three tenured faculty members. She runs a tight ship and keeps us all organized.

Our most exciting news is that Xuemei Cheng joined us as our fifth tenure-line faculty member in August 2009. Xuemei (who goes by May) is a nanoscientist and has taken us in a new direction. May builds nanostructures using both "top down" and "bottom up" approaches and then investigates their magnetic properties. She has a new lab on the ground floor across from the lower floor bathrooms (for those of you who remember the lower floor of Park) in what was Geology space. Indeed, May's lab was "phase one" of a much-hoped-for Park renovation. This new lab is fully equipped with fume hoods and that good stuff that makes it look like a chemistry lab as well as a clean room and space for her magnetism studies. May had two seniors in her first year (2009-10) and she has two more students this summer. They are making nanowires and other nanostructures. She does some of her experiments at Argonne National Laboratory where she uses the synchrotron source of high-energy X-rays. May has research ties with Jonas Goldsmith in the Chemistry Department (nanostructures) and with Arlo Weil in the Geology Department (magnetic measurements) whose magnetic-field-free cage is big enough to walk around in. His lab is next door to May's. May is already making her mark. She says we need to get more freshmen and sophomores in the research lab, which she is indeed doing. Interestingly enough, I am a faculty representative to a Trustee committee called "The Competitive Position of the College" and we are looking at data that says the same thing - this generation of potential science students want less old-fashioned structure and more in-lab experience from the get go.

If you look closely at our history, it is difficult to determine exactly who had positions that were, in practice "permanent" and who had temporary positions. Tenure as a concept and policy probably wasn't instituted until it was laid out in AAUP documents in the 1950's; so there wouldn't be mention of tenure-track positions until Bryn Mawr adopted tenure as a policy. In the first two years of the college (1885-87), a chemistry faculty member offered either a physics course or a joint physics & chemistry course. We had a full-time, long-term position from 1887 though the word "professor" does not appear until 1910. We went from one long-term position to two quite soon, about 1894. Then we went from two to three in 1931 with the arrival of Walter Michaels. Again, it is difficult to say when we went from three to four "permanent" people but this was certainly the case by 1948, after the war, with the arrival of Rosalie Hoyt (who also taught here 1942-44 as the equivalent of an instructor) and John Pruett. When Al Albano came in 1970, first as a replacement for Walter Michael's work as editor of the American Journal of Physics, later as a tenure-track faculty member, we became five tenure-track faculty members until Rosalie Hoyt retired in 1984. So, we were "four" from 1948 to 1973, "five" from 1973 to 1984, and "four" again from 1984 to 2009. Now we are now five again. It should be made clear, though, that the actual number of teaching faculty has always been considerably greater than these "long-term" or "tenure-track" numbers.

Interestingly enough, May's position is not an increase in teaching power but is associated with the college's attempt to reduce the number of contingent or adjunct positions. We were able to show that we have had one or more full-time-equivalent adjunct positions for more

than 20 years. So, this position is really a conversion from adjunct to tenure track. Mike Noel was chair when this appointment was sanctioned. I was able to provide a lot of data (much of it, I believe, originating from Neal Abraham) but Mike deserves a huge amount of credit for bringing together both the data and the cogent argument to make it all happen.

I further note that this additional tenure-track position occurred at a time when the total number of tenure-track positions at the college was being cut back (yet again - it's a continuous yo-yo connected, I think, to the sun spot cycle). The ratio of administrators to teachers continues to increase. Now that would be an interesting plot to see. I think this is the same everywhere. And the budget for outside consultants also continues to increase. It's the way of the world. It's the corporate model. Some of us remember gentler, kinder times.

Well, here's the big surprise. Believe it or not, we will search again this coming year for a sixth tenure-track position. When it rains it pours. This search is associated with (a) a promise of being leave-proofed - no interim faculty members to replace people on leave, and (b) a significant increase in the number of students in the postbaccalaureate premedical program. If you were around any time after the early 1970's then you will be aware of this program. If not, Google it! So, a year from now I hope to be able to tell you about a new exciting tenure track faculty member. (Chemistry and Biology will also go up by one because of the increase in the size of the postbaccalaureate program.)

As I enter my 34th year at the college, I will take on the chairmanship again for the 2010-11 season. My lab continues to run full tilt as I try to understand the relationship between molecular & crystal structure and intramolecular motion in organic molecular solids. I team up with folks who do small molecule X-ray diffraction and recently I have started to do scanning electron microscopy (SEM) at the University of Pennsylvania. My favorite activity is to lock myself in my own lab for 12-16 hour experiment days where I run two experimental stations simultaneously. I am doing this once every ten days or so this summer. I love it. It's what prevents me from retiring.

Liz McCormack enters her 16th year at the college this Fall. She was the Chair of the General Faculty 2007-2008, she has been the Dean of Graduate Studies for the last two years (2008-2010) and will continue for the 2010-11 year. Then she gets a year leave 2011-12 and will return to the department full time 2012-13. Liz teaches one course a year to keep her fingers in the pie while being the dean and her large and powerful lasers continue to excite very high principal quantum number states of simple diatomic molecules like H_2 and HD. She continues her national "presence" in major initiatives, in particular Project Kaleidoscope.

Did you know that the Graduate School of Arts and Sciences (GSAS) and the Graduate School of Social Work and Social Research (GSSWSR) are now one: "the Graduate School." And there is now only one faculty (the Faculty), not three (Undergraduate Arts & Sciences, GSAS, and GSSWSR).

Michael Noel, who came in 2000 and was tenured in 2006, will have a well-earned semester leave Fall 2010. He has just completed a three-year term as department chair. He did a great job. Competent first-time chairmen have a hugely positive effect on departments. They take the department in new directions. Mike led the charge making our fifth (May Cheng) and

sixth tenure-line positions a reality. He has also just completed a three-year term on the Committee on Academic Priorities (CAP). This is the committee that, quite literally, determines the direction of the college. Mike chaired this committee 2009-10 and it's a huge amount of work. Being elected to this committee on the floor of The Faculty is a testament to the very high regard with which he is held by his colleagues college-wide. His lab is a beehive of activity; his group has been busy building a new, smaller, trap for very small numbers of rubidium atoms which will essentially sit still as he investigates electric dipole interactions between pairs of atoms. Although he is not directly involved in the quantum computing game, his research certainly adds to the canon of fundamental knowledge which will ultimately make quantum computers a reality.

Mark Matlin is a Lecturer and the Laboratory Coordinator, but since his "permanent" arrival in 2003 he has taught many courses at all levels. (I say "permanent" because many of you will remember that Mark taught as an adjunct at Bryn Mawr and at Haverford for several years in the 1990's.) Having a PhD in General Relativity from the high-powered Maryland Group helps. In 2009-10 Mark taught a new course for humanities and social science majors; "Contemporary Physics: From Superstrings to the Multiverse." It was very exciting. Mark has just taken over Undergraduate Major Advising which has become a huge job these days.

David Nice is leaving us to take a tenure-track position at Lafayette College, an hour or so north of Bryn Mawr. He was here for five years (2005-10) and we all benefited greatly from his experience, his thoughtfulness, and his connectedness. Most non-tenure-track faculty members don't get very involved with the department beyond their immediate teaching duties but David, from day one, was indistinguishable from the "rest of us." David controls the world's largest radio telescope in Arecibo, Puerto Rico from his kitchen in Doylestown, Pennsylvania on some Saturday mornings. He is engaged with experimental tests of General Relativity using signals from binary stars, one of which is a pulsar. We will miss his involvement in the department and his positive upbeat disposition. We wish him well at Lafayette.

Michael Schulz joined us in 2007 and was recently appointed to a second term en route to a 2014 tenure decision. Mike has filled a huge hole. He is a "high energy theorist." He works on several topics involving String Theory, including an investigation of the degree to which String Theory "reduces" to the Standard Model of the fundamental particles and interactions at low energies (and many fewer spatial dimensions). Mike will be on Junior Faculty Leave for the 2010-11 academic year. He will spend some time at MIT, one of his old hunting grounds. Mike has made important contributions to the upper-level undergraduate theory courses, including a course in Particle Physics which yours truly sat in on for the first half. (Hey, I learned the mathematics behind Feynman diagrams and renormalization. I've always wanted to know these things.) In his first year at Bryn Mawr, Mike asked to do, and did in fact teach (very successfully), the sophomore electronics lab! You never know what these high-powered theorists will pull off. I do remember theorist extraordinaire Alfonso Albano making some great advances in our advanced "superlab."

Speaking of Al Albano, he retired in 2005, and now resides in Greater San Francisco where he drinks wine, baby sits three grandchildren, and hops off to the Philippines now and again.

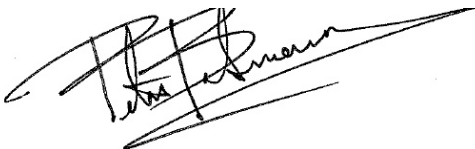
We have three wonderful graduate students. Don Fahey works with Mike Noel building and using atom traps, Elliott Tamaro works with Mike Schulz on high energy theory projects, and Melanie Lott works, at Bryn Mawr, under the direction of Dickenson College Professor Emeritus Kenneth Laws on the Physics of Dance. (Ken received his PhD from Bryn Mawr in the early 1960's - so we are keeping this research "in the family" so to speak.) Melanie has built a platform that measures forces and torques when she does a pirouette. All three students plan to take their Qualifying Examinations in the early Fall. We wish them luck.

I want to thank Neal Abraham for proofreading this letter. He made several important corrections, he made helpful suggestions for change, and he made good suggestions for additions. Neal was a Dickenson undergraduate who came here and completed his PhD in 1977. He taught at Swarthmore College 1977-80 and then came to Bryn Mawr College where he stayed for 18 years. He then went to DePauw University in 1998 where he became Vice President for Academic Affairs and Dean of the Faculty. In 2009, Neal moved to Amherst, MA to take up the position of Executive Director of Five Colleges, Inc. Thanks, Neal!

Well, I'm feeling very old. I don't have an iPhone. I need one of my sons to make my TV work. I still read a daily newspaper which my older sons find very amusing. I feel better when the age distribution in the department is plotted on a logarithmic scale. Then it doesn't look so bad. (By the same token, on a log scale, the dinosaurs aren't so far in the past, either.)

Please keep in touch. Please correct my errors. We don't have forms on the web. You are not a number. Ann Klingensmith and I will try to keep a file on each of you.

Yours truly,

A handwritten signature in black ink, appearing to read "Peter Beckmann", with a long, sweeping underline that extends to the right.

Peter Beckmann