

Tikhon Bykov
Physics Department, Box 38
McMurry University
Abilene, TX 79697
(325) 793-4875
tbykov@mcm.edu

Dear Friend

It is the first time when I am writing the Alumni News Letter on behalf of the McMurry Physics Department. I have replaced (or at least trying to replace) Dr. Christensen in this as well as in many other capacities related to the department business. It is my fourth year here, but I have suddenly become the senior department member.

It is with mixed feelings Dr. Keith and I have learned about Joe Christensen's decision to leave McMurry University. We wish Joe the best of luck at his new place of work in Thomas More College, KY and hope that he will not forget McMurry. It is difficult to overestimate Joe's contribution to the development of our Physics Program and we will do everything we can to continue the program's improvement after his departure. A search is now in progress to replace Joe. We have received around forty applications to fill this position and hope that we will be able to find an excellent teacher and scholar to take this job. We are going to start interviewing candidates this week and plan to fill this vacancy before we leave for a spring break.

Another significant change at McMurry is that the former College of Arts and Sciences has been divided into four Schools. The Physics Department has now become a part of the School of Natural and Computational Sciences under the leadership of Dean Gary Wilson. Along with this change, all academic departments at McMurry, including Physics, no longer have the position of department chair. So, Dr. Keith and I are trying to equally distribute our efforts to take care of the former chair's responsibilities in a most efficient way. Since the department only had two full-time faculty members this fall, we were extremely busy trying to have all the job done on time, but still got somewhat behind. In particular, this newsletter, which usually goes out at the end of the semester, is delayed. My sincere apologies for not being able to send the holiday greetings on time and I still want to wish you very happy and prosperous New Year.

As Dr. Christensen wrote in the last issue of this letter we have set a new record by having seven graduates in the 2006-2007 academic year. All of them have either gotten a job or gone on to Graduate School. I would like to take this opportunity to congratulate them once again, for the first time not as McMurry Physics students, but as McMurry Physics alumni receiving this letter. We still expect a significant number of graduates this year. Geoff Colburn has just graduated in December. He is now taking a semester off and deciding which graduate program to choose to go to in the fall. We expect another four graduates in the spring. Unfortunately the junior/sophomore class size is rather small, but freshmen enrollment looks promising with seven students in University Physics class. I hope that we will be able to keep most of them. Moreover, I have to say that the quality of our freshmen students is very high this year and I am looking forward to their future successes. Even so, the enrolment issue is something we definitely need to address through more active recruitment and advertisement of our department. To this end, it is difficult to overestimate the role that our alumni and friends can play in this process. Whenever you see or hear about somebody who is interested in physics and can potentially become a student, please let this person know about your experience at the McMurry Physics Department. Even if you do not have enough time for a long talk with this person, please feel free to give him/her our contact information and invite them to visit our web site at <http://www.mcm.edu/newsite/web/academics/ncs/physics/index.htm>.

We would also like to continue the series of talks given by the alumni on the subject "What I have done with my physics degree". Many of you have participated in this series in the past. However, most of the students who heard your presentations have already left, so we will be more than happy to have you back and tell your story to the next group of our students. I know that many of you have friends, relatives and other business which keeps bringing you back to Abilene. When you come to town, please feel free to

stop by the department and talk to us about new and exciting things happening with you. If you let us know in advance about your coming we will be able to gather our students to meet with you. Even if you do not wish to make a formal presentation, it is always very important for students to hear and have an ability to talk with somebody who has succeeded in their career paths and may serve as a guiding example.

It was in his last newsletter where Joe asked our alumni and friends to make contributions towards "PHYSICS STUDENT RESEARCH" with the goal of spending this money on the equipment for student research projects. I would like to emphasize it once again that solicitation of funds never was and is not going to become the major task of this informational newsletter. At the same time, I would like to thank those of you who had generously supported Joe's initiative and tell you a little bit about the projects undertaken by our students last year. Since we only recently started to require all our graduates to complete the research project for graduation, we are still learning the best way of choosing the topics for the student research, so it can be both appropriate to the student's level and interesting to a student at the same time. Even though not all of the projects were complete successes, several projects went very well. In particular John Garza and Joseph Glover built a working ion chamber out of a simple coffee can. The chamber was able to detect gamma-radiation from weak radioactive sources. Rusty Stogsdill and Kirk McGinty studied the physics of a football in flight and the role of the air resistance on its trajectory. Adam Davidson completed an internship with the Texas Department of Transportation. These and some other student achievements will help us in future development of even stronger student research component to our program.

Not only our students, but the department faculty members are also staying involved in scholarly activities. Drs. Bykov and Christensen in collaboration with Dr. Yelena Kosheleva (Psychology Department) will continue to work on yet another version of the grant proposal to the NSF in order to obtain funds for a Physics Education research project. The previous versions of the proposal received generally positive reviews from the NSF review panel, but still were not funded and additional changes were recommended. If funded, Dr. Christensen will continue collaboration even at his new place of work in Thomas More College. Dr. Bykov is currently working on the preliminary stage of this project by teaching University Physics with extensive use of student Tablet PCs. During the summer Dr. Bykov worked on the project funded by a Sam Taylor grant. Along with David Upshaw, junior physics major, he developed some new experiments and created the laboratory manual to be used in Advanced Physics Laboratory course. Dr. Keith has continued to work with Southwest Research Institute (SwRI) in San Antonio as a contractor on a new three-year grant to perform research and data analysis related to the NASA/ESA Cluster spacecraft mission. As part of this work, he completed updates of data calibration files and wrote new data sorting software over the summer. A paper on satellite data analysis techniques was also accepted for publication. This grant also funded travel to a Cluster instrument team meeting in Abingdon, UK this fall where Dr. Keith presented his recent work. Both Drs. Bykov and Keith attended the "New Physics Faculty Workshop" reunion, which took place in late June at the American Center for Physics in College Park, MD. Dr. Bykov presented a poster devoted to inquiry-based methods of teaching introductory physics labs.

Many of you, especially the older generation of our alumni, may know about the very special significance which this year has for the McMurry Physics Department. In the fall of 2008, the department will celebrate its 50th anniversary. McMurry Physics Department's heritage is remarkable and demonstrates a rich tradition of scholarship and dedication to science. It is my goal to build stronger ties between the previous and present generations of McMurry physicists through exploring the rich history of the department from its early days until now. The record of this history will contribute to building a stronger academic program by creating a sense of continuity and passing down knowledge from the older generations to the younger. It is unfortunate that this continuity was somewhat lost when the McMurry physics major went out of existence in the seventies and the link between the generations was severed. In the mid-nineties, the program was revitalized due to the efforts of Dr. Rick Thompson. With Dr. Thompson and recently Dr. Christensen leaving McMurry, we are once again standing at the verge of breaking the generational connection. It is this connection and the informal mentor-apprentice relationship between the older and younger faculty as well as between the faculty and the students that form the true community of scholars. The presence of this community is vital for the existence of a strong science program. That is why I would like to ask your help to make the aforementioned connection

stronger and to write the detailed history of the McMurry Physics Department.

There are about 50 people receiving this letter and if each of you writes a very short (about one page) essay telling about your most memorable experience, event, the person who influenced you the most or the most useful physics class you took while you were a physics major at McMurry and how this affected your future career, then the entire picture of our history will emerge from the collection of these essays.

It is also my goal to build a systematic record of how the former students applied their degrees in physics and in what ways it was useful to them. I do not want this information to be kept in the head of the current department senior faculty and disappear as this person decides to leave, but rather to be recorded, analyzed, integrated, and conveyed to current students and prospective students with the intent to increase the motivation to either finish the program or join the program (in case of prospective students).

The most interesting “memorable event stories” and “success stories” will be published at the Physics department web site. Gaining more publicity of McMurry alumni’s achievements will help to maintain ties between generations of students and to keep both morale and motivation high.

Finally, through surveying recent and not-so-recent alumni we can address an issue that is of concern to us currently – how to best conduct undergraduate student research. We can make more informed decisions about how undergraduate research should be done if we systematically collect information on the student projects that were done in the past. So, if you remember what projects you participated in and whether or not you think you learned something useful from them, please write me about that as well.

It has not been that long since the Physics major was reestablished at McMurry. We are still young and growing and searching for effective ways to build a stronger program. I can state with confidence that we can build the future more effectively if we carefully analyze the past and take into account what was previously done. You can be our best guide in this direction.

I would also like to know more about the people who worked here in the past. Of course we have all heard about Dr. Bottom and met Dr. Sharp. I also had a privilege of working with Dr. Thompson and Dr. Christensen, but I would still like to learn more about these people from the alumni perspective. Moreover, I am confident that during the 50 years of the department history there were other people who dedicated much of their time and effort to this program. I would really like to learn about their contributions as well. The findings will be arranged in a text of publishable quality and will serve the basis for constructing the departmental Wall of Honor (former faculty and alumni) and adding a history page to the departmental web site.

We are looking forward to celebrating our 50th anniversary next fall. We hope that by this time we will be able to collect information from our alumni and friends to write a detailed history of the department. If you have any interesting information or ideas on how to celebrate this event in the best possible way, please share them with us. I hope to hear from you soon. Please look for more information about the celebration in the spring issue of this letter.

If you have been recently added to our database and never received this letter before and/or by some reason want to be removed from the list and/or prefer to update your contact information and/or prefer to receive the electronic instead of the paper copy of this letter, please do not hesitate to contact me at the address above or by email at tbykov@mcm.edu.

Tikhon Bykov – Wayne Keith, The McMurry Physics Department