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Dear Friend :

As this academic year comes to its end, as usual we have a number of news items we would like to share with you.

Since we had a very large group of graduating seniors last spring, some of whom had managed to finish their degrees in a shorter than 4-year period, we have not had any new graduates this May. As you may remember, our only graduate this year was David Upshaw. After his graduation in December he originally planned on going to work in industry. However, later this spring David changed his mind and applied to the graduate program in Texas Tech University. We are now glad to announce David's acceptance to the M.S./Ph.D. program in Mechanical Engineering at Texas Tech. He has already found a graduate advisor and will be working on research and taking classes towards his degree even during this summer. We send our congratulations and best wishes to David on this new career path.

Our senior class is still rather small; we will only have two graduates next year. However, both next year's sophomore and junior classes look very strong and promising. There will be 5 or 6 juniors and 5 or 6 sophomores next year. The fall enrolment is just starting, so it is difficult to estimate how many incoming freshmen we will have. At the moment there are already 7 students enrolled into the University Physics course. Another interesting phenomenon we have faced this year is a significant increase in enrolment for our General Physics course. This has occurred mostly because of the Exercise Science and Pre-physical Therapy majors, who are now required to take physics. For the first time the department will be offering both General Physics I and II during the summer. At the moment there are no open seats left either in the summer, or in the fall sections of General Physics.

As I said, the picture with the enrollment of the new physics majors is not quite clear yet, and as usual, and especially in these difficult economic times, we would like to encourage our friends and alumni to tell anybody who is interested in physics and can potentially become a student about our physics program and let this person know about your experience at McMurry. Please feel free to give the prospective students our contact information and invite them to visit our web site at <http://www.mcm.edu/newsite/web/academics/ncs/physics/index.htm>.

We had many of you coming to visit and meet with our students in the fall, but unfortunately nobody came in the spring. We would very much like to continue the series of talks given by the alumni. I would especially like to encourage our recent (last 10 years) graduates. We do not hear much from you. Some of you have stopped by, but almost none have given a talk. And yet it is your generation, which is probably most closely connected to our current students. It is you who they would most like to hear tell them the stories of what you did right after you left McMurry. They want to know what difficulties and unexpected turns they may face on their career paths in the modern world right after they leave college. In saying all that, I am in no way discouraging our older generation of the alumni. You are the ones who have been most active during recent years, on several occasions giving more than one talk. We are extremely grateful for that and would like to see even more of you. I know that many of you may come here not with a special purpose of giving a talk, but for some other occasion, such as Homecoming or the SMAB meeting. If you are planning to participate in this and/or any other activities on the McMurry campus and will be willing to meet with our students, please let us know in advance and we will be happy to arrange for such a meeting/talk. I think last year's reception during the Homecoming

was a big success. Even though there is no special anniversary occasion this year, we will be happy to have a physics reception during the Homecoming again. Just let us know in advance if you will be coming, so we know how many people we should plan to accommodate.

As I said, we are going to have two graduates next year. Both of them have started working on their senior research projects. Todd Neer has proposed building a prototype ultrasonic dog deterrent device into a wristwatch case for joggers. This project has significance for him, not only from the physics standpoint, but also as a runner who has been attacked by dogs several times. Jeanette Schofield is proposing a project to do computational modeling of the trajectory for a spacecraft to study Europa, one of the moons of Jupiter.

In early April all physics faculty, accompanied by four students (Michael Herriage, Michael Luvaul, Jeanette Schofield, and David Upshaw) attended the Texas Section of the American Physical Society/ American Association of Physics Teachers/ Society of Physics Students meeting at Tarleton State University in Stephenville. During the meeting we were very glad to meet our recent graduate John Garza, who is current working as a nuclear physics instructor for the US Navy. He is also taking classes towards an MS degree in medical physics at Georgia Tech University. During the conference John gave a talk to recruit graduating physics majors for the US Navy. Our students Michael Herriage and Jeanette Schofield (in collaboration with Aaron Ward) presented a poster devoted to the results of their observational astronomy trip to Arizona last May. Michael Luvaul (physics freshman and math sophomore!) gave a talk to review the basic ideas behind Quantum Information Theory. At the moment Michael thinks that this subject may become an area for his future research as a physics senior and later in graduate school. Michael has given the same talk during the local math conference at Abilene Christian University earlier the same month. In late April on his own Michael Luvaul attended a Quantum Information Theory workshop at Massachusetts Institute of Technology (Cambridge, MA). He has told us about what he learned during the workshop at a special presentation during the last SPS meeting of this semester.

In late April several physics students, including Michael Herriage, Michael Luvaul, Jeanette Schofield, Aaron Ward, and Austin Wegner participated in the McMurry Student Poster competition. Even though none of them became a finalist this year, we appreciate their effort and hope that they as well as other physics students will participate in this competition in the future.

Among the faculty the following can be noted:

In March, Dr. Bykov (accompanied by Dr. Kosheleva, Visiting Assistant Professor of Psychology, Dr. Bykov's wife and collaborator on physics education projects) attended a New Physics Faculty workshop reunion and National American Physical Society meeting in Pittsburgh, PA. During the workshop reunion Dr. Bykov presented a poster entitled "Development of student-centered innovative curricula for advanced physics laboratory", which was based on the work he has done to redesign the Advanced Physics Laboratory course and create a new lab manual for this course and which was supported by the Sam Taylor Foundation grant two years ago. During the national APS meeting Dr. Bykov (in collaboration with Dr. Kosheleva) gave a talk entitled "Taking inquiry to the next level: Tablet PC's to stimulate active learning and unify introductory physics curriculum". In his talk Dr. Bykov presented the intermediate results of his ongoing effort to modify the teaching strategy in the University Physics course to convert it into a system of flexible instructional modules, where lecture, lab, and discussion are merged into one technologically and collaboratively rich experience and Tablet PCs are integrated as a single unifying technology to improve continuity among various module components. Dr. Bykov has worked on this project for several years. It was once supported by the Sam Taylor Foundation grant. Dr. Bykov has also made several (so far unsuccessful) attempts to gain National Science Foundation support for this project. However, regardless of the lack of NSF support, significant achievements have been made, including this year's final modification of the introductory lab curriculum and the creation of an online laboratory manual. Starting the 2009-2010 academic year, the University Physics course will be finally transformed into a series of instructional modules as mentioned above. Dr. Bykov is looking forward to this first piloting of his new teaching approach.

As was mentioned in last year's news letter, Dr. Keith (along with Dr. Martin of Math, and Dr. Veltkamp of Chemistry) have been working to develop the McMurry Center for Mission Outreach with Science and Technology (MCMOST). This spring the professors participating in the center team-taught the "Leadership Science and Mathematics" course for the first time. The Faculty teaching the course and the students taking the course designed and implemented an outreach project to support the teaching of Physical Science at the rural high school in Clyde, TX in order to improve the TAKS scores of underperforming 11th grade students. The project involved having the high school students build and fly Estes model rockets and included dozens of trips to Clyde by teams of McMurry students and faculty over a three week period and culminated in a field trip by Clyde students to McMurry where larger rockets were launched and science demonstrations performed. The McMurry students completed the course by packaging the materials and worksheets they wrote for the project for other schools to use in the future.

In May Dr. Keith travelled to Toronto, Canada to participate in the spring meeting of the American Geophysical Union where he gave a talk on his recent work entitled "Multi-satellite investigations of the cusps and the effect of various pitch angle sorting algorithms". This work seeks to understand the behavior of particles from the Sun that penetrate the Earth's magnetic field by comparing data from two very different satellite missions.

We would also like to congratulate Dr. Keith and his wife Melinda on the birth of their first daughter Amy in January of this year.

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 an electronic instead of a paper copy of this letter, please do not hesitate to contact me at the address above or by email at tbykov@mcm.edu.

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