So What's New with You?

We hope you enjoyed this year's edition of *Matter 'n Motion*. We're keeping you informed about what's going on at UMR, but we'd also like to know what's new with you, both personally and professionally. Any information you send will be circulated in the department and, if appropriate, inserted in the next physics newsletter unless you request otherwise.

Please print or type your information, and include your mailing address so that we can update our records. Mail to: UMR Physics Department, University of Missouri-Rolla, 65409-0640. Or, if you would prefer, you can e-mail us your comments at physics@umr.edu. Thanks for keeping in touch. It's always good to hear from old friends.

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Mailing Address: _______________________________________________________

Job Title (if appropriate): __________________________

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News or Comments: _____________________________________________________

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Ninth Annual Schearer Prize Competition

The Ninth Annual Schearer Prize Competition for Graduate Research took place in December, 2002. The Schearer Prize is awarded from a fund established in the memory of Dr. Laird D. Schearer, late Curators’ Professor of Physics, who joined the Physics Department in 1971, and served as departmental chair from 1971 to 1977. Professor Schearer, who passed away in 1993 while on research leave in France, had an intense interest in graduate students and their research. The department looks forward each year to awarding the Schearer Prize, which recognizes the best research conducted by UMR graduate students in physics.

This year’s competition had two entries, Abdalla Obiedat and Rastko Sknepnek. Mr. Obiedat is performing his research under the direction of UMR Professor Gerry Wilenski while Mr. Sknepnek has been working with UMR’s newest Assistant Professor, Thomas Voja. During a regular department colloquium, they described their research to an audience consisting of faculty, students, friends, and this year’s Schearer Prize Committee members, Ralph Alexander, Greg Story, Carsten Ulrich, and Bob DaBois.

The committee awarded first place to Mr. Sknepnek for his presentation, entitled “Superconducting quantum phase transitions in disordered ferromagnets,” and second place to Mr. Obiedat, who presented “Comparison of experimental and theoretical nuclear reactions at low temperatures: an equation of state approach.” In making the awards, the committee was impressed with the quality of the talks and the students’ ability to convey the significance of their research.

The competition ended on a relaxed note with the participants and members of the department enjoying dinner at a local restaurant, another tradition of which the department feels Laird would definitely approve.

To Contact UMR Physics

If you would like to contact us for any reason, you can reach us by phone at (573) 341-4781 and by e-mail at physics@umr.edu. You might also be interested in checking out our web page, http://www.umr.edu/physics.

Physics Department Awards 2002-2003 Scholarships and Fellowships

The following scholarships have been endowed through the generous gifts of the friends of the UMR Physics Department. Scholarships are announced annually at the Harold Q Fuller Undergraduate Research Seminar, held this past year on April 18, 2002. Congratulations to all our Departmental Scholars!

Recipients of the Harold Q Fuller Scholarship-Loan were Travis Yates of Searcy, Arkansas, and Ryan Mallory of Ballwin, Missouri. The $1,300 scholarship-loan was endowed by the late Dr. Fuller, Chair of the Physics Department from 1948 to 1970 and former Dean of the College of Arts and Sciences, to recognize outstanding achievements among juniors and seniors in physics. One quarter of the scholarship is an interest-free loan that students begin to repay when they start their first jobs.

Recipient of the Burke H. Miller Memorial Scholarship was Bernard Fendler of Kirkwood, Missouri. This $500 scholarship was established by the Miller family to commemorate the academic achievements of their son, Burke, who graduated with a bachelor’s degree in physics in 1969 and later died during the Vietnam War. The award is for promising and dedicated students in physics.

Christopher Lloyd of St. Louis, Missouri, received the L. E. Woodman Memorial Scholarship. This $1,000 scholarship was established by the Woodman family in honor of Dr. L. E. Woodman, Chair of the Physics Department from 1919 to 1948. It is offered to students in physics of good moral character, maintaining a 3.5 plus grade point average, and are in final year of study.

The Charles M. Rice Scholarships are presented to outstanding juniors or seniors in physics at UMR. They were established by Mr. Charles M. Rice (MS ’50) to recognize and encourage outstanding effort and achievement in undergraduate physics.

Chuck got his MS in physics at MSM in 1950 and was awarded a Professional Degree from UMR in 1966. During his career, he did award-winning work for the US government and later started several successful business enterprises. The 2002-2003 scholarship was awarded to Josh Sosa of Shawnee Mission, Kansas.

The Richard W. Hannum Endowed Development Fund was established through a bequest by Richard Hannum (PhD ’66). The fund is currently used to provide scholarships for outstanding students in Physics. Joseph Eimer of Hillsboro, Missouri, received the Hannum Scholarship for 2001-2002.

In addition to endowed scholarships, which are usually awarded to juniors and seniors, the department awards special Physics Department Scholarships, funded from the annual phonathon, to students who earn a grade point average of 3.5 or higher. This past year, department scholarships were awarded to the following students, who range in academic standing from freshmen to senior: John Zirbel of Watertown, South Dakota, Deepak Vaid of New Delhi, India, Timothy Ivinic of St. Louis, Missouri, Cameron Johnson of Manchester, Missouri, Christopher Schwartz of Vienna, Missouri, Elizabeth Farrand of Fair Grove, Missouri, Terence Anderson of Pilot Knob, Missouri, Nathaniel Bates of O’Fallon, Missouri, Micah Burgdorf of Florissant, Missouri, Paul Gholson of Jackson, Missouri, Daniel Huhmann of Tipton, Missouri, Ryan Kinney of Gladstone, Missouri, and Walter Kowsaliska of High Ridge, Missouri.

Endowments: Gifts that Keep on Giving

Through the generosity of friends and alumni, the Department of Physics has been very successful in raising annual support for scholarships, student travel funds, and program enrichment. As you make your annual commitment to the department, however, you might want to consider starting an endowment in your name or in the name of a loved one, so that your gift will still be making a difference when your great-grandchildren enroll at UMR. An endowment to the university will bear the name that you designate in perpetuity.

Consider, e.g., the impact of leaving an endowed scholarship or lecture series in your name. With an initial gift of $10,000 (which may be started with $2,000 and a pledge of $2,000 annually over the next five years) you can start a fund from which generations of students will benefit. The fund will generate approximately $500 per year initially, and will continue to grow as the principal increases each year. The UMR physics department has several donors that have been very successful in their endowment contributions for several years, including endowments established recently by Ed and Mary Sue Niehaus, and by the estate of Richard Hannum.

Endowments may be established with cash or readily marketable securities. Regardless of the amount of the endowment you wish to establish, the methods used to establish it, your investment will have a significant and long-term impact on the Physics Department and on the University of Missouri-Rolla. Please call Maggie Morrison or Mr. Kevin Lindsey at 1-800-392-4112 if you have any questions or wish to discuss options available to you for giving to the department.

Rastko Sknepnek

Chances are good to be the winner of the Ninth Annual Laird D. Schearer competition. I’d like to thank my supervisor Dr. Thomas Voja for his patient guidance on this project and on the hilly path towards my PhD thesis. I thank also our collaborator, Dr. Rajesh Narayanan, of the Max-Planck Institute in Dresden, who helped me clarify some subtle points, and the Prize Committee for the opportunity to present my research. And last, but not least, I wish to thank my family and my friends for their unstinting love and support.

I came to UMR in February 2002, following Dr. Voja, from Chenninz University in Germany, where I spent two years working on my PhD thesis as a member of the Institute of Physics. I had joined Chenninz University in May 2000 after graduating from the University of Belgrade, in Yugoslavia, my home country. Although, in the beginning, I was really hesitant about coming to a small town like Rolla, I quickly got it to be a nice place to live, with many friendly people and a really competitive and rich scientific life.

My talk in the competition was based on research I am doing for my PhD thesis. Our research on superconducting quantum phase transitions in disordered ferromagnets was motivated by the experimental discovery in 2000 that at low temperatures certain materials can exhibit superconductivity and ferromagnetism at the same time. This result, which clearly contradicted the general and well established philosophy behind conventional superconductivity, suggested a physically rich mechanism underlying the phenomenon and opened intriguing theoretical questions. We took a bite of that cake and asked how such a state arose, i.e., what the transition to a ferromagnetic superconductor looked like. To be immersed in a problem at the very front of modern condensed matter physics was a tough, intellectual challenge, but the scientific thrill and experience I gained were more than worth the effort. I hope in the future to continue work on this and similar problems.
Alumni Notes:

Bob Spratt (BS ’58) writes “I am impressed by the work invested in the newsletter and enjoyed reading it. Also enjoyed chatting with the young man who telephoned me.”

Choonhee Tan Zahn (MS ’99) reports “we were blessed with the arrival of our son, Jacob Zhan, on November 30, 2001. Jacob weighed in at 8 pounds 13 ounces and was 21-1/2 inches tall at birth.”

Chris Thornton (BS ’90) started his own company, CATCO Technologies, LLC. He married Pam Porchey on October 20, 2001, and reports that he is loving married life.

Jerry Keifer (Ph.D. ’79) has been promoted to the rank of Professor of Physics at St. Bonaventure University. UMR Alum David DiMattio (Ph.D. ’99) also recently joined the St. Bonaventure Physics Department as Assistant Professor of Physics.

Dharma Abayarathna (Ph.D. ’89) is a Group Leader at Champion Technologies, Inc.

Arthur Nickless (BS ’65) tells us that he and his wife Joan now have three grandchildren.

Amateur radio enthusiast Don Schricker (Ph.D. ’02) has a postdoctoral position at the Chemistry and Biochemistry department at the University of South Carolina-Columbia, where he works on the analysis of the surface of catalysts.

Dan Odero (Ph.D. ’00) designs and implements state of the art treatment methodologies of cancer using external radiation beams for St. Francis Health Center in Topeka, Kansas.

Harry Dreste (BS ’51) has enjoyed his 13 years of retirement. He keeps busy around the home, working on model electric trains and his old Studebaker cars. He belongs to two old car clubs and volunteers at the VA Hospital. He reports that his medical treatments are going well.

We were saddened to hear ...

Athel Merts (BS ’51) passed away on December 18, 2001.


Congratulations to UMR’s 2002 Physics Degree Recipients!

May 2002
Bachelor of Science
Steven Michael Ahlkenk
Jason James Burmes
Levia Matthew Foster
Charlie Robert Morgan Glaux

Master of Science
Benjamin Christopher Eimer

Doctor of Philosophy
Luan An
Osman Ozturk
Masafumi Masuda Tahami
Srinivas Lakshminaras Varadharajan

Professional Degree
Richard E. Shuber

December 2002
Bachelor of Science
Jolo Da Silva Soua
Lora Ann Comer
Bernard Joseph Foulster

Master of Science
Carmen Marie Douthat
Jared Franklin Hand

Doctor of Philosophy
Lea Sarangas Ramnugrangi

Professional Degree
Douglas A. Heathery

Leaving a Legacy Through Your Will

planned gift makes a perpetual statement about your dedication to MSM-UMR. While many may not be able to establish an endowed one today, they find that they are able to leave a significant legacy to the university through a planned gift, such as a bequest, life income gift, or life insurance. By making a planned gift, you show your loyalty to an institution that has played a significant role in shaping your future. For more information about giving a planned gift, contact Judy Cavender at 573-541-6090 or e-mail her at judy@umr.edu.

Bieniek Gives Students a Big LEAD

UMR physics professor Ron Bieniek has been named by UMR Chancellor Gary Thomas to head a campus wide program designed to enhance active learning and student engagement across the curriculum. As Director of the new Learning Enhancement Across Disciplines (LEAD) Program, Ron is developing a coordinated system of student academic assistance, with the main goal being to “find ways of increasing active student-oriented learning, particularly for students who need some assistance in developing their full potential.”

The LEAD program grows out of the very successful Physics Learning Centers which Bieniek initiated eight years ago, and which now serve as a role model for Learning Centers in other departments. Staffed by trained faculty and undergraduate peer instructors, center instructors act as guides who encourage students to take greater responsibility for their learning in an atmosphere of cooperative engagement. Many visitors to the physics learning center remark on the camaraderie that develops when students help students, as instructors roam about the room.

Even students in Prof. Allan Pringle’s new algebra-based College Physics course use the Physics Learning Center along side students of Engineering Physics. Pringle relates, “At first, my College Physics students were a little (continued on page 8)