



# The News~tron Transport

NEWSLETTER OF THE NUCLEAR ENGINEERING PROGRAM AND THE AMERICAN NUCLEAR SOCIETY

ISSUE 2

WWW.NUC.UMR.EDU

FALL 2007



## Nuclear Engineering Summer Camp 2007

This summer, the UMR Nuclear Engineering (NE) department held its 8<sup>th</sup> annual nuclear engineering summer camp. The program was more successful than previous years with 64 students representing 15 different states in attendance for the two sessions held on July 15-20 and July 22-27, 2007. Many thanks go out to those NE students, faculty, staff, alumni, and guests for their efforts in putting on such a successful program.

NE Summer camp program offers prospective high school students an opportunity to be exposed to the various aspects of Nuclear Engineering field through a variety of activities, including radionuclide identification, reactor tours, half-life experiments and the opportunity to use much of the equipment nuclear engineers use in the field. This year's focus groups included: *Reactor Operations* led by Bill Bonzer, Dan Estel, and Brian Porter, *Nuclear Power in Space* led by Dr. Jeffrey King, Suzi Schroer and Aaron Craft, *Next Generation Reactors* led by Mike Lampe, Ryan Moore and Brandon Distler, and *Nuclear Fuel Cycle* led by Dr. Shoaib Usman, Amol Patil and David Gallego. Each group provided various activities throughout the week and the students provided a presentation at the end of the week on what they did and learned. Students were given evening quizzes, Social activities were held at the end of every day including bowling, recreation center activities, movies and more. This year, the Nuclear Power in Space group designed, constructed and launched model space reactors.

We are very thankful that again, Ameren UE granted the students access to a tour of the Callaway Nuclear Power Plant in Fulton, MO. The students got a tour of the turbine building, talked to engineers at the plant, learned how a plant works, learned about the history and future of the plant, and got a taste of what nuclear engineers actually do in the field.

Overall, the program was a huge success. Many students indicated a strong interest in the Nuclear Engineering program here at UMR. Many thanks go out to those involved in putting on such a successful program, especially students for their enthusiasm throughout the program!





## Letter from the Program Chair

Greetings from the Nuclear Program at UMR, soon to be named Missouri S&T (Missouri University of Science and Technology) effective Jan. 1, 2008.

It is a pleasure to tell you that our Undergraduate Students performed the best ever in the competition for NANT Scholarships last year. In 2006–07, out of a total of 139 NANT Scholarships awarded nationally, 16 scholarships were awarded to UMR students. Students from 33 universities competed for the scholarships and UMR ranked No.1 for the total number of scholarships awarded.

Summer Camp 2007 brought 64 high school students from 15 states for an educational experience in Nuclear Engineering at UMR. Hopefully, many of these bright students will choose UMR as their college of choice. As you know, the summer camps are very effective in recruiting students into our program. As a result of the past summer camps and the recruiting efforts of the ANS student chapter, the number of freshman students with NE preference totals 58 this Fall Semester. Our total enrollment, including 58 freshmen and 12 graduate students, is 160.

On another important subject, I am very sorry to say that Dr Seungjin Kim of our faculty left UMR to join Penn State this semester. Although this speaks highly for the quality of our professors it provides us with a challenge to hire and retain good faculty members who would like to make Rolla their home. The recruiting of faculty members is particularly difficult since many universities are hiring new faculty to replace those who are retiring at a time when there is almost a nuclear renaissance world-wide. As you know, the shortage of Nuclear Engineers and Scientists is being felt by all sectors of the Nuclear Industry.

It is a pleasure to note, however, that the UMR administration has authorized us to hire an Assistant Professor and a Senior Faculty member, preferably at a rank of full Professor. Both positions are currently advertised on our website [www.nuc.umn.edu](http://www.nuc.umn.edu).

Last year, it was a mixed news for grants and contracts. The Infrastructure grant from DOE (INIE) ended resulting in a substantial loss of funding of about \$275,000 a year for student scholarships, graduate assistantships and laboratory upgrades. However, the shortfall has been partially made up by three new grants from DOE and NRC. The new grants are very restrictive and can only be used for graduate assistantships and laboratory upgrades. This dramatic change in funding leaves us in a dire need of substantial scholarship support for our undergraduates.

In closing, I am proud to say that the Nuclear Engineering program is doing very well. With your help we survived the difficult times in the 90's and are on a healthy path to prominence nationally, particularly with our undergraduates. I urge you to support us this year, particularly for undergraduate scholarships. If you request we can establish scholarships in your name to be awarded to deserving students. Thank you very much for all your past help.

Best wishes,

Arvind S. Kumar

Professor and Program Chair

Nuclear Engineering



## Dr Usman's Research Initiatives and Success Update

News-tron Transport provides me the opportunity to update all of you on my research initiatives, successes and education endeavors. We had a superb year!

Our research on natural convection has progressed significantly. Benchmark experiments were conducted observing the on-set of convection in a Benard cell experiment. During the past year, we have completed a comprehensive computer simulation study to develop a very useful analogy between natural convection and electrical circuit. Dimensionless numbers are identified which govern the phenomenon of natural convection. We demonstrated that a natural convection system filters out high-frequency temperature fluctuations at the source side, while low-frequency oscillations pass through the system. These results which are particularly useful for safety analysis of reactor transient were presented at ANS Annual meeting and are published in two separate articles in Nuclear Technology.

The primary purpose of our natural convection study was to launch a much larger experimental research program on the phenomenon of alpha convection. I am pleased to report that our research on alpha convection is now supported by DoE under their Nuclear Engineering Education Research (NEER) program. NEER award is truly an honor for nuclear engineering researcher. The proposed research will develop understanding of the phenomenon and investigate its potential impact on various applications including Nano-systems.

Our effort on burn-up analysis of MOX fuel has also made significantly progress. This research involves non-destructive analysis of spent MOX fuel using g-spectroscopy to enable burnup analysis. MOX burnup and decay simulations were performed using ORIGEN-ARP. Analysis of these results indicated various viable options to deduce isotopic composition of the spent fuel. Initial results of this research were presented at the ANS Annual meeting. These results will be analyzed to determine performance specifications of a detection system for field applications. A rather large consortium proposal with four universities and a national lab was submitted to DoE under Nuclear Energy Research Initiative for Consortia (NERIC) program. Irrespective of the out come of this proposal the collaboration between the consortium members will continue to develop this exciting field of nuclear engineering.



As a sub-component of spent fuel analysis research, an initiative was undertaken to better describe the radiation detector deadtime behavior. This research has produced an enhanced two parameter based detector deadtime correction scheme. Use of total deadtime and paralysis factor is proposed together with an measurement technique to determine these parameters. UMR nuclear reactor is extensively used in this research to produce high intensity short lived radionuclides. Results from his research are submitted for publication. To facilitate this type of research nuclear engineering faculty at UMR submitted a proposal to DoE under their GNEP Readiness program to support construction of low background hot-cell facility at the nuclear reactor. We are glad to have received the support. In addition to many other research, the new hot-cell will help us to collect high quality data to characterize radiation detector's dead-time behavior and therefore will facilitate accurate high intensity radiation measurements.



I am pleased to report that for the first time at UMR, I offered my technical elective class on “Radiological Engineering” as an experimental course. It was truly a rewarding experience for me when 11 students registered for the course. I take some special pride to inform you that based on this experimental class a proposal on curriculum development proposal was submitted to NRC and is funded. UMR and the University of Tennessee at Knoxville will develop collaborative teaching material suitable for distance education. This effort is particularly effective in leveraging our experimental assets (for example UMR nuclear reactor) by sharing in remote access format. Work on this education project has started.



I would like to thank my graduate and undergraduate students who have worked hard to enable all the successes that I reported. In particular I want to thank Amol Patil and David Gallego for their work on detector deadtime, Bassam Abdelnabi for his effort on natural convection simulation study, and Jonathan Fransch for his effort with neutron detector development. Last but not the least, I want to thank Matt Dennis for his contribution towards MOX spent fuel analysis. From the undergraduate group, I want to acknowledge Tom Goter, Scott Sychaia, and Terry Yu for their hard work. It is truly rewarding for me to see undergraduate students finishing their work and making a presentation at a national conference like the ANS Annual meeting.

In the end, I also welcome Vaibhav Khane and Michelle Marincel to our nuclear engineering program and in particular to my research group.

Shoaib Usman, Ph.D.,  
Assistant Professor  
Nuclear Engineering

## What's New?

Keep us posted on what's happening with you or if you have news to share.



## Dr. Jeffrey King... a look back...

As I look back on my first year as an Assistant Professor, I feel a strong sense of pride of having helped the Class of 2007 complete their undergraduate endeavors. Last May, I got to watch over twenty of my students receive their diplomas and start on the next phase of their lives. I am proud to have been a part of that, and look forward to repeating the experience with the even larger Class of 2008 and the many classes to come.

Over the summer, the department hosted over a hundred prospective nuclear engineering students during three weeks of Jackling Summer Camp and two weeks of Nuclear Summer Camp. Many of these students are, or will be soon, joining us as new nuclear engineering undergrads and working with them over the summer was a truly enjoyable experience.

While not working with summer camp students, I devoted my efforts this summer to increasing our capabilities at the UMRR (soon to be the MSTR). We now have the capability to do digital neutron radiography using the reactor's beam port. Additionally, I have completely the initial geometric description of a detailed MCNP model of our reactor. This model is exceptionally detailed, blueprint accurate and includes the reactor core, coolant pool, beam port and thermal column. At the end of the summer we did a detailed examination of the thermal column, which will provide us with new experiment facilities for use in our reactor laboratory classes.

### And a look forward...

In the coming year, I will be teaching Nuclear Fuel Cycle, Nuclear Reactor Physics, Reactor Laboratory II, Introduction to Nuclear Technology and Introduction to Nuclear Engineering. I look forward to those classes being fun and challenging and meeting the many new students I have not yet had the chance to get to know. I am also serving as a freshman and sophomore academic advisor, so I should get a chance to work with almost all of the students in the department in some fashion or another in the coming year.

I am looking forward to continuing my research in several areas, including, innovative control schemes for compact space nuclear reactors, digital neutron radiography, and the use of innovative nuclear reactors to provide energy input to renewable energy cycles. We will be validating the MCNP model of the MSTR in the coming year and the development of a graphical front-end is underway. We are working on the design of vibration damping workbench for digital neutron radiography and will soon be beginning the design and construction of a remotely operated shielded cell at the MSTR.

## Greetings from the UMR American Nuclear Society by Suzi Schroer



Greetings from the UMR American Nuclear Society! It's a pleasure to have the opportunity to cover the UMR ANS Student Sections successes and future events. The ANS portion of this newsletter will cover some of the events that occurred after last year's newsletter was printed and also events that we have planned for this semester.

Last year we had some very exciting developments take place. As you will read later, Warren Nyer, the last surviving witness of Chicago Pile One, came to campus and spoke to an audience of several hundred. It was a great event and many people from outside the nuclear department attended. We believe that many people came away with a new appreciation for how far nuclear energy has developed in the past 50 years. We also added a new officer position that was briefly mentioned in last year's newsletter. The Public Information Officer position grew beyond anyone's expectations, and we are looking forward to see what this position will bring to the organization this upcoming year. A new department organization has also been added, Women in Nuclear Energy and Men Too (WIN'EM). As you will read later, ANS and WIN'EM have already started cooperatively planning some events. Many students and faculty are excited to see what direction this new organization will go. It should prove to be a very exciting year for ANS as they continue with their partnership with WIN'EM. ANS is planning a Nuclear Awareness Week as well that you will read about later in the newsletter. The week will consist of different activities and events each day to educate people about different aspects of nuclear energy. It should be a truly informative, yet fun, week that will allow students on campus to see nuclear as a viable energy source as well as a diverse field.

I would like to thank our Nuclear Engineering Department Chair, Dr. Kumar, for including us in this newsletter. I would also like to thank our alumni for your continued support. If you ever have any questions feel free to let us know. Furthermore, if you ever would like to speak or present at a meeting shoot us an email. We would be more than happy for you to come and share.

## ANS Social Events by Krista Kaiser



The American Nuclear Society is having its annual Welcome Back Picnic on September 20th, 2007 at 5:00 pm at Lyon's Club Park. ANS will be providing food and beverages for those attending. The Society is also planning a float trip/camping trip this fall. ANS is really looking forward to having fun on the river! ANS has done numerous float trips in the past and they all have been great bonding times for students and professors alike. Some events ANS participates in entail joint socials with Women In Nuclear. Other social ideas include a Nuke Movie Night and an Ice Cream Social. Possible social ideas are trips up to Columbia's reactor and joining up with other ANS chapters such as Purdue's and Wisconsin's chapters. ANS looks forward to being able to meet with other students and experiencing different research reactors.

**Check out the new  
and improved UMR  
ANS website!  
visit  
[www.ans.umn.edu](http://www.ans.umn.edu)**

## Upcoming events for ANS by Travis Gitau



This year ANS has many great events planned. For speakers, ANS will be working to bring a wide variety of speakers. Topics this year will range from recruitment presentations from top nuclear companies, to presentations that reflect on the impact that nuclear technology will have on the energy crisis. New this year, ANS will be working with WIN'EM to bring in speakers from across the nation. In September alone, speakers will be coming to UMR from the United States Navy and Dominion. This new partnership will increase the number of speakers that come to the UMR campus to speak on nuclear technology, opening many doors for students to learn and network.

Also this year, ANS will be working with student sections from across the nation to participate in cross-section socials and presentations. Work is currently being done to have student sections from the University of Illinois and the University of Wisconsin. Work is also being done on arranging trips for UMR ANS members to nuclear companies across the Mid-

## Nuclear Awareness Week by Mackenzie Sweeney

The American Nuclear Society is in the process of planning an exciting week of activities designed to educate UMR students about several facets of nuclear technology. Each day of the week of October 1st-5th, 2007 will concentrate on a different focus area: nuclear power, nuclear waste and radiation safety, food irradiation, fusion, and space applications. There will be games, promotional materials, posters, education activities, an irradiated food barbeque, and a movie night, and other events still "in the works."

The Rolla chapter of ANS is hosting this awareness week in hopes of promoting knowledge about and appreciation for the benefits of nuclear technology among the student body. ANS members feel it is important that the students who are preparing to be our peers in the scientific and technological career fields recognize the many benefits and applications of nuclear-based technology. There's more to nuclear than just power generations; many professional engineers are unaware of whole focus areas that are greatly influenced by nuclear science.

In addition to providing insight into the vast usefulness of nuclear technology, ANS also desires to make the current study population aware and accepting of the UMRR. UMR is one of the few schools with a functional nuclear reactor on campus, and it is the goal of ANS to make sure the student body is informed about and supportive of the reactors' presence and it's use in classes and research conducted by the nuclear engineering department.

If you would like to participate in Nuclear Awareness Week this October, please contact ANS president Suzi Schroer or Outreach Officer Mackenzie Sweeney.

## New Officer Position

The Public Information Officer position was a new addition last year. Brandon Distler, graduate student in nuclear engineering, took up the challenge of this new position. The Public information officer is responsible for writing articles to correct information that has been put out by other writers. This ranges from fixing small technical errors to glaring anti-nuclear ideas that ignore obvious facts. The position started as a way to fix some campus articles that had several little mistakes that were simply the result of non-nuclear students providing the information, and then moved on to addressing more widespread media, such as articles by Business Week and Greenpeace. For the year four articles were written and posted on the UMR-ANS website.



# Reaching Out to a Younger Generation

On February 17, 2007 the UMR American Nuclear Society continued the annual tradition of hosting the Boy Scout Nuclear Science Merit Badge Program. Every year we invite Boy Scouts from all around the Missouri area to learn about the applications and uses of nuclear science. They learn nuclear science topics through several lectures, projects, and demonstrations in an eight hour session. After presenting the material, all of the Scouts take a test that they need to pass to obtain their Merit Badge. The test uses multiple choice and diagram drawing to determine if each child learned the lectured materials to pass. It is usually a lot of fun for both the scouts and the adult leaders. The kids enjoy the hands-on activities and learning, while the adults enjoy the kid's antics and intelligence. These kids seem to get smarter every year.

The session began on a cold wintry Saturday morning. It was 8:00 in the morning and flurries of snow could be seen everywhere. After our welcoming group found around forty undeterred scouts and their leaders, we directed them to their learning area in Fulton Hall. Our President, Mike Lampe began with a quick introduction and proceeded to lecture about nuclear science basics. The kids surprised us with extremely intelligent and knowledgeable questions and responses. Most of them had not even hit middle-school, and they knew about atoms, quarks, and radioactive decay.



The second session involved a rotating activity. Half the group received a tour from our very own nuclear reactor which seemed to excite a lot of the kids. The other group made cloud-chambers to 'see' radiation. Once each group finished their activity, they switched with the next group. Thanks to engineering aptitude of Scott Spychala, we had the best cloud-chamber session in years due the creation of brand-new super-efficient chambers built the night before. The scouts really enjoyed seeing short straight lines for alpha particles, curly wispy lines for beta particles, and curly helixes for gamma radiation. After the radiation demonstration, ANS members demonstrated how liquid nitrogen affected objects. The mentioning of liquid nitrogen made the kids really enthusiastic. They revealed with glee that the liquid nitrogen was a big factor in choosing the Nuclear Science Merit Badge. Our major demonstrations were

shrinking a balloon and smashing a racquet ball to pieces. Souvenir shattered racquet ball pieces were desired by all. The Scouts were dazzled and wanted to freeze more items to see if they broke. We froze a pop tart wrapper, a marshmallow, and a piece a gum. Our final lecture of the morning was given by Scott Spychala about nuclear power and fusion topics. The kids found replicating the picture of a nuclear power plant a daunting task. Unfortunately, our time ran over and we had a late lunch. We all piled in one car and gulped down a healthy lunch at Subway.

In the afternoon, Alfred Schovanez headed the isotope construction project. The Scouts learned about isotopes and demonstrated their knowledge by building their very own hydrogen isotopes out of gum drops, raisins, and marshmallows. Following the isotope building, Ronald Brey gave an informative lecture about nuclear pioneers and scientists. With his degree in history and language study to aid him, Ronald gave the scouts an education on the proper pronunciation of each of the scientist's names amongst other interesting facts. The next hands-on activity of the day was demonstrating the concept of half life. Adam Daniel headed this effort. He tastily showed the idea of half-life through the decay of chocolate M&M candies. The final lecture of the day was given by Alfred Schovanez in a Patton-esque style about all the various available nuclear careers. After a review of the material, all the Scouts were given the test.

Overall, the Scout Merit Badge Program was a success. All the Scouts that took the test passed and received their Nuclear Science Badge. Further, no one was hurt (or had their hearing damaged). UMR ANS would like to give its appreciation to all who helped out at the event. It helped promote UMR ANS and helped develop leadership and organization skills for the members that participated. In addition, it really is a ton of fun to interact with the kids and it gives you something to talk about when you interview with people about your leadership experience.

# Historic Nuclear Icon Visits UMR

On December 5, 2006, Warren Nyer gave a presentation on Recollections of the Chicago Pile 1 and the Early Stages of the Manhattan Project. He discussed his first-hand account as the last surviving witness of the Chicago Pile.

Warren Nyer is one of the last surviving members of Enrico Fermi's team that built the world's first nuclear reactor, the Chicago Pile One. Chicago Pile 1 went critical at the University of Chicago on December 2nd, 1942. He also worked on the Manhattan Project where he monitored the criticality at the X-10 pilot reactor in Oak Ridge and the later Hanford piles. The Hanford piles would be the nuclear reactors that produced the plutonium for the "Fat Man" nuclear weapon in World War II.

In 1951, Warren Nyer joined the staff at the National Reactor Testing Station, which is now the Idaho National Laboratory. From 1954 to 1967, he led the development of the Idaho Reactor Safety Program that included the Power Burst Facility and Loss of Fluid Test Reactor.

He has shared a great deal of knowledge with the Atomic Energy Commission and to the American Nuclear Society. Warren Nyer won the ANS George C. Lawrence Pioneering Award in 1994 for his many contributions to the field of nuclear reactor safety.

The seminar was advertised campus-wide to get as many people as possible to attend and the effort proved very successful. With every seat taken and the walls lined with people, Mr. Nyer told his story about the chain reaction that he says changed the lives of everyone in the room. His pictures and recollections provided everyone with a clearer picture of what it was like as an early nuclear pioneer. Mr. Nyer's much anticipated speech left everyone in attendance with a little piece of history and a lot of knowledge. After his presentation, he was presented with a gift and a certificate of appreciation from the Rolla ANS Chapter and the Nuclear Engineering department.



## ANS Polo Shirts Available!

We are pleased to offer classy green polo shirts bearing the UMR ANS logo over the heart. They are perfect for any business casual environment or alumni function. The shirts are the low, low price of only \$20.

Number of each size:

\_\_S \_\_M \_\_L \_\_XL \_\_XXL

Total Number of shirts \_\_\*\$20.00=\_\_\_\_\_ + \$4.00 shipping=\_\_\_\_\_Final Total

Please make checks payable to UMR ANS. You can always contact us at [ans.UMR.edu](mailto:ans.UMR.edu) with any questions or visit [www.ans.UMR.edu](http://www.ans.UMR.edu)

Mail Check and Order Form to:

UMR ANS Shirt Sales  
222 Fulton Hall  
1870 Miner Circle  
Rolla, MO 65409-0170

# Thank You

The Nuclear Engineering department would like to thank and acknowledge the following alumni, friends, and companies for their generous contributions between July 1, 2006 and June 30, 2007.

## GIFTS OVER \$100

Alley, Michael Erin	1996
Blase, John J	1974
Bronson, Frazier L	1964
Cadwallader, Lee C	1981
Conner, Leslie R	1968
Covey, Mark Kevin	1982
Evanoff, Kelly Brian	1982
Hadley, Stanton W	1979
Hart, Charles M	1986
Holland, Timothy Edward	1991
Hovland, Rebecca Michele	1998
Kossina, Paul G	1977
Krause, Serena Jagtiani	1998
Kreisel, Kirk Andrew	1995
Liles, Darrell Ray	1996
Lojek, Jan R	1969
Petteway, Drew Emery	2004
Richardson, Brian David	1996
Sautman, Mark Thomas	1991
Schottel, Jimmy D	1970
Shelton, Dale Alan	1985
Shrestha, Bijaya	1995
Singer, Richard J	1975
Smith, David L	1980
Starke, Richard M	1971
Steinman, Rebecca Lee	1996
Szatkowski, Daniel Jarrard	1989
Thompson, Russell Ray	1984
Wiese, Charles W	1976

## CORPORATE GIFTS \$100 & UNDER

Alliant Energy Foundation  
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## CORPORATE GIFTS OVER \$100

American Electric Power  
American Nuclear Society  
Bechtel Foundation  
Entergy Operations, Inc.  
Exelon Corporation  
Horn Rapids Land and Cattle Co.  
Lockheed Martin Corporation  
Nuclear Advisory Group, Inc.  
PSEG  
United Technologies Corporation

# Annual Phonathon

## November 4 – 8, 2007



Your generous contributions in the past have tremendously helped our students with the costs of attending UMR, greatly aid our recruitment efforts, and helped us upgrade our labs by providing matching funds for equipment purchases. This year's Phonathon is scheduled for **November 4 - 8, 2007**. Nuclear Engineering students will be contacting you during this five day period. Your generous support this year will be highly appreciated. We look forward to talking to you again!

### GIFTS \$100 & UNDER

Aguilar, Omar Ivan	1985
Barkalow, Thomas W	1974
Barnes, David Kent	1983
Bartine, David E	1966
Beck, Robert Lee	1993
Browning, Jimmy J	1985
Burchill, William E	1964
Buth, Donald James	1985
Cragg, Christopher D	1985
Croessmann, C. Dennis	1981
Daily, Charles R	1983
East, Jacqueline Marie	1989
Eastburn, Michael R	1967
Edwards, Kevin B	1989
Erwin, Kenneth Thomas	1997
Eshelman, Curtis David	1986
Ferrero, Jamie Marlene	2003
Ford, Michael John R.	1988
Fulton, Bradley Alden	1988
Garner, Harold R	1976
Hayward, Robert L	1975
Hinton, William K	1976
Knudsen, Andrew T	1986
Krause, Serena Jagtiani	1998
Laky, Peter Gyula	1994
Lilleston, Richard N	1979
Love, Tracia Lynn	2002
McLaughlin, Matthew Kevin	1992
Mitchell, Brie C	2000
Moffett, Donald L	1974
Phillips, Katherine Ann	1990
Rackley, Kevin D	1980
Reeves, Corie Allene	2001
Rickard, Donald Edward	1985
Schnell, Donald F	1986
Simpkins, Alice Ann	1989
Smith, Lenard Alan	1992
Steinmetz, Keith Alan	1994
Suwal, Gajendra M	1976
Taber, Brian Keith	1991
Tsoufanidis, Nicholas	
Van Asdale, Shawn Michael	1994

**Effective January 1, 2008 UMR  
will become the  
Missouri University of Science  
and Technology  
(Missouri S&T)**

**National Ranking:** The outside world is beginning to recognize the true collection of talent, quality, and dedication located at UMR. Here are some of the rankings the University has received the past year:

U.S. News & World Report,

"America's Best Colleges 2007" (August 2006)

UMR ranks No. 54 among the nation's top public national universities (tied for 112th overall among public and private universities).

UMR is tied for 48th on the list of best engineering programs at doctoral-granting universities and tied for 26th place among public doctoral-granting universities.

UMR is the 2nd highest ranked public national technological research university

"Best Graduate Schools 2007" (April 2006)

UMR is ranked 68th among the nation's best graduate engineering schools

U.S. News's online rankings include five UMR graduate engineering programs:

Civil engineering, ranked 44th

Electrical engineering, ranked 51st

Materials engineering, ranked 47th

Mechanical engineering, ranked 50th

**Nuclear engineering, ranked 15th**



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