

New research center created at UMR



GROW's early success celebrated

GROW (Gasification Research on Wood) is one of the research projects being administered through UMR's newly-established Renewable Resources Research Center. The project showed definite success in its first phase, the production of low-energy gas from sawdust.

The overall objective of the GROW program is to develop parameters and guidelines for a wood gasification process that could be commercially feasible as a substitute for natural gas within the next few years.

At a special ceremony held Nov. 3 in Rolla, U.S. Sen. Tom Eagleton commemorated the project's success to date by lighting a flare fueled by gas that had been produced from wood (shown at right in the photo).

Senator Eagleton said, "The beginning of wisdom in energy matters is to recognize that there are no quick and easy solutions. There is little we can do in the short run to escape dependence on foreign oil. We have a long and difficult road to negotiate and there will be setbacks along the way.

"But for all the problems and dangers posed by our present energy difficulties, there is also great opportunity for this country. Once again, we have been called upon as a nation to meet a great challenge. The energy crisis presents us with a test of will, a test of the sort that this nation loves to conquer. I am confident that the genius of the American people will rise to the test.

"We have in project GROW an example of that genius at work. The conversion of wood residues and other biomass sources into a natural gas substitute holds enormous promise for our energy future."

Speaking with Sen. Eagleton is Virgil Flanigan, technical director of GROW, and behind Dr. Flanigan, is Yildirim Omurtag, GROW project manager.

Part of the equipment being used in the project was donated by the Adolph Coors Co. of Golden, Colo.

UM system President James C. Olson recently approved creation of the Renewable Resources Research Center at UMR.

The center, which is to become operational Jan. 1, will coordinate UMR research efforts aimed at the development of renewable energy resources such as biomass, solar radiation, wind, rainfall and geothermal and ocean gradients.

In addition, the center will address such matters as transportation systems, conservation, energy systems and storage, economic and sociological impact and environmental protection as they relate to renewable resources.

"We are both pleased and encouraged by the decision," UMR Chancellor Joseph M. Marchello said. "We at UMR feel that we have the expertise and now the facilities to make a real contribution in the area of renewable resources. And with the need to find alternatives for our rapidly diminishing reserves of fossil fuels, the work done at the center will be beneficial to both the state and the country as a whole."

By operating as an umbrella organization for renewable resources research at UMR, the center will serve to meet all of the campus' research needs in this area. In so doing, the center will enable UMR to:

- Develop a comprehensive renewable resources research program.
- Enhance its research potential in renewable resources.
- Provide for continuity in renewable resources research and avoid duplication of programs.
- Respond to requests for research and information and assistance.

The center, which will be partially funded by external research projects, is being established within the School of Engineering and housed in UMR's Engineering Research Laboratory. However, some components of the center will be conducted at other locations.

Initially, the center will be composed of personnel from the chemical, electrical and mechanical engineering management faculties. In time, other departments will become involved in the workings of the center.

For the present, serving as research associate on half-time appointments to the center will be: Jack L. Boone, solar energy; Virgil Flanigan, biomass; James L. Gaddy, interim director, biomass; Yildirim Omurtag, biomass; and Thomas P. Van Doren, solar energy.



Harold Biellier

Holiday, egg-a-day poultry research brings rewards

A white leghorn by the name of WB 2988 is bringing fame to UMC's poultry department and could improve the fortunes of poultry farmers across the country.

The hen has laid 441 eggs in 440 days—a record, as far as UMC researchers know. And through selective breeding and a shortened laying cycle, the scientists hope to produce more of these egg-a-day birds, which could increase egg production by a third.

"Today's average hen lays only about 270 eggs a year," says Harold Biellier, professor of poultry husbandry at UMC (shown above). "She lays one egg about every 25 hours for four or five days, skips a day, then starts over.

"Your average hen gets about 90 days off each year. That's a lot more than I get."

The technique Dr. Biellier and his colleagues are using shortens the birds' day to as little as 22 hours during part of their laying cycle. Since the birds are raised inside, they simply adjust the light-dark cycle with automatic timers that turn lights off and on.

A. B. Stephenson, UMC poultry researcher, has spent four years selecting for turkeys that will be adaptable to cage-rearing instead of floor rearing. If he continues to make progress, turkey egg laying and collecting could be economically mechanized, he says, particularly if egg-producing turkeys are housed in cages with sloping floors, as chickens now are. Then the eggs would roll to the front of the nest, where they could be picked up by a conveyor belt. That would reduce turkey production costs substantially.

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Emphasis on the arts

Olson urges extended arts funding

UM President James C. Olson urged greater funding support for the arts within higher education at a Nov. 26 meeting of the National Association of State Universities and Land-Grant Colleges, in Washington, D.C.

Speaking at a joint session of NASULGC's Council on Academic Affairs and Fine Arts Commission, Dr. Olson noted that although institutions of higher education have become leading patrons of the arts, higher education is treated as a stepchild in the arts funding structure. Specifically, he suggested that the National Endowment for the Arts recognize universities and colleges as major contenders for their challenge grants.

"I would hope that the National Endowment would review its whole position with respect to colleges and universities," Dr. Olson stated. "With the notable exception of the dance touring program, which has provided heavy support for colleges and universities, the National Endowment has not been particularly supportive."

In outlining the areas within higher education which could benefit from additional support, Dr. Olson suggested professional internship programs for students, development and expansion of visiting artists programs on campuses and financial assistance for young artists.

In making the case for the latter point, Dr. Olson noted that "just as financial assistance is provided for potential doctors, lawyers and

scientists, so should it be for striving young writers, painters, musicians and dancers.

"It is essential that support for the arts within higher education be on more than just an 'extracurricular' basis," he stressed. "In the past, support has come from a variety of sources, but by a rather hit or miss approach."

Dr. Olson also cautioned his colleagues to take responsibility for maintaining the "rightful and valuable place of the arts in the academic mainstream."

He noted that universities have become the leading patrons of the arts by providing training for professional artists, by educating general college students and by being a community resource for the arts.

"With decreasing appropriations, declining enrollments and other financial pressures, the temptation is to cut such programs as the arts," he explained. "We must have the integrity to maintain that education should not conform to an economic model of supply and demand."

Dr. Olson was one of four NASULGC Fine Arts Commissioners asked to present position papers at the session, titled "The Arts in the Public University: Fringe or Focus."

Other speakers included Willard L. Boyd, president of the University of Iowa; Joe Sabatello, dean, College of Fine Arts, University of Florida; and Andrew Broekema, dean, College of Arts, Ohio State University.



Unique curator catalogues gifts

Joyce Schiller's title at UMSL is "curator of gifts in kind. According to UMSL Chancellor Arnold Grobman, she represents an answer to a problem that many young institutions of higher learning face—how to handle artwork and other gifts made to schools that have not had time to develop the museums and similar resources so

often taken for granted at more established institutions.

While Ms. Schiller's training in art history and library science lets her see the gifts in perspective, her own preferences are clear. "I enjoy watching the ways departments use the machinery. But I'm partial to works of art."



Antique instruments given to UMR

David Oakley, head of the UMR music department, holds an antique musical instrument called an ophicleide, used in early military bands. Beside him is a helicon bass, which replaced

the ophicleide. Both instruments are part of the late T. R. Beveridge's antique instrument collection recently donated to the UMR music department by the collector's family.

UMSL, local orchestra combine forces

UMSL and the Kammergild Chamber Orchestra have entered an ongoing agreement that places the orchestra in residence at UMSL.

According to a joint announcement by Arnold Grobman, UMSL chancellor, and Stuart Symington Jr., president of the Kammergild board of directors, the orchestra will establish a permanent base at UMSL, and participate in musical and educational activities appropriate to both the orchestra and the University.

A series of special concerts, master classes and demonstrations at UMSL are planned. In turn, the University will offer administrative, promotional and fund-raising assistance to the orchestra.

According to Chancellor Grobman, "the agreement represents an ideal combination of private and public entities, and of formal education and an outstanding arts organization."

At UMSL, the Kammergild orchestra will share space and facilities with the music department under Chairman Leonard Ott. The

department endorsed the residency agreement unanimously.

The Kammergild was founded in 1978 by violinist Lazar Gosman and violist Mischa Braitberg, who will continue in their positions as music director and managing director, respectively, of the chamber group.

Mr. Gosman began his career with the Leningrad Philharmonic in 1950, just after graduation from the Moscow Conservatory. When the philharmonic formed the Leningrad Chamber Orchestra, Mr. Gosman was tapped to be leader of the prestigious smaller group.

In 1977, he emigrated from Russia and came to the St. Louis Symphony seven months later. His desire to start a chamber orchestra, like the one in Leningrad, led to the formation of the Kammergild, with Mr. Braitberg as the co-founder.

The Kammergild quickly gained community support following its first concert at the St. Louis Art Museum in March, 1978, and played to standing room audiences last season.

Historical records catalogued, microfilmed for use

Some of the oldest and most interesting historical records in the state, the Ste. Genevieve Archives, are now available to researchers, announces Richard Brownlee, director of the State Historical Society of Missouri.

Approximately 28,000 documents of potential interest to genealogists, historians, students and the general public make up the archives' contents. One third of the papers, written in French, date between 1756 and 1804.

Over the past 14 months the historical society and the UM Western Historical Manuscripts Collection personnel have catalogued and microfilmed the contents.

The collection has been subdivided into three sections for easy use. And since most of the documents are not translated, but are in the original French or Spanish, both content and inventory descriptions have been added to help the English-speaking layman, Dr. Brownlee said.

Records in the oldest section date back to 1756, more than half a century before Missouri became a state. Wills, land transactions, estate papers, marriage certificates and contracts, and various fee books, registers and minutes are included.

Documents in the two later groupings include account books listing

sales and receipts for furs and other goods, as well as numerous court records.

Dr. Brownlee said a subject and name index is being prepared for the archives, and will include a surname index of Ste. Genevieve families.

A complementary collection of some 3,000 items (the French and Spanish Archives of St. Louis 1763-1847) may also be examined at the historical society, and brings the total number of items available for the colonial, territorial and early statehood periods to over 30,000, Dr. Brownlee said.

In a recent address to the

Foundation for the Restoration of Ste. Genevieve, Dr. Brownlee spoke of the "magnificent research possibilities that exist in the Ste. Genevieve documents. Little attention," he remarked, "was given by historians to manuscript resources left in Missouri once France and Spain relinquished governmental jurisdiction."

Microfilm of the collection may be seen at the Ste. Genevieve Courthouse in Ste. Genevieve, Mo., and at the UM Western Historical Manuscripts Collection - State Historical Society Manuscripts, Elmer Ellis Library, Columbia.

State historical society offers depictions of 'Christmas past'

Missourians with a curiosity about how their ancestors observed Christmas may want to acquaint themselves with the offerings of the State Historical Society of Missouri.

Volume 65 (1971) of the *Missouri Historical Review*, the society's quarterly publication, contains an enlightening article on how early Missourians spent their holiday seasons. The illustration below, of a family gathered at Christmas dinner, appeared in that article along with accounts of the first large Christmas trees known to arrive in Kansas City, notes on holiday food and drink popular in the mid-nineteenth century and illustrations of sledding and other winter sports.

The ice skating scene to the right is a reproduction of an original woodcut in the historical society's fine arts collection. Executed by Fred Geary, a Carrollton, Mo., artist who died in 1946, the woodcut is one of many that the artist did depicting Missouri scenes, circuses, animals, old taverns and houses and even Missouri river steamboats.

Mr. Geary, who was educated at William Jewell College and the Kansas City Art Institute, also depicted western scenes such as the mural in the Westport Room of the old Kansas City Union Station, as well as the design for the rugs and dishes used on the Santa



Fe Super Chief, when that train was first put into operation.

The illustration at bottom right, of Santa and a curious fellow on a rooftop, is also from the society's holiday photograph collection. It originally appeared in *Harper's*, Jan. 1, 1876.



Personnel appointments decentralized by Olson

UM system President James C. Olson announces that beginning Jan. 1, campus chancellors will have the authority and responsibility for most personnel appointments.

This action is a modification of Executive Order No. 6, which now requires all academic appointments with a salary of \$20,000 or more and all staff appointments above \$18,000 to be approved by the president's office.

After the first of the year the only personnel actions requiring the president's approval will be the following:

- Personnel actions for teaching and research staff whose appointments also include (a) an administrative title and who report to the office of the chancellor or of a vice chancellor/provost or (b) the title of assistant or associate dean;
 - Recommendation for continuous appointment (tenure);
 - Recommendation for promotion in rank to associate or full professor;
 - Recommendation for sabbatical leave, or leave of absence without pay for more than 30 days;
 - Termination of tenured faculty members;
 - New regular appointments of full professors;
 - Recommendation for extra compensation, for teaching and research staff with salary greater than \$25,000;
 - All executive level positions reporting directly to a chancellor or a chancellor's immediate staff.
- "The change should significantly reduce the flow of appointment papers coming to my office," Dr. Olson said.

Grobman forms council

UMSL Chancellor Arnold Grobman has formed a council of St. Louis citizens to advise him on major policy questions regarding UMSL and its relationship to its community.

Formation of the council was generated by the "UMSL 2000" long-range planning process. In 1978-79 Dr. Grobman charged a planning council with the task of evaluating UMSL's history and drawing up a comprehensive plan for the development of the campus through the year 2000.

One of the recommendations of the planning committee was that the university become even more involved than it now is in its responsibilities to the St. Louis metropolitan area.

The council will consist of approximately 15 persons representing business, industry, labor, the professions, education, cultural activities, agencies and other public and private organizations.

Educator to explain survey

A recently-completed national survey of student mathematics skills will be interpreted for various professional groups and journals by UMC mathematics education professor Robert Reys and four other educators.

The survey, which included some 71,000 students in grade schools and high schools, found that many have mastered the mechanics of mathematics, but are unable to apply such knowledge to solving everyday problems.

This & That

The findings indicate a decline in overall mathematics skills since 1973, when a similar survey was made by the National Institute of Education, sponsors of the current project. The most noticeable decline was among older students.

Dr. Reys, who served on the team that interpreted the 1973 report as well, directed a recent study of the impact of calculators on mathematics education in grade schools and high schools.

Legal aid program honored

The volunteer legal aid program of the UMKC School of Law has won the American Bar Association's Most Outstanding Student Bar Association Project for 1978-79. UMKC's law students received this honor with their Women's Prison Project, a program they have operated at Renz Correctional Center since 1974.

Department library named

The UMC Department of English has named the department's library in memory of the late Professor George Pace. Confronted with a prolonged illness, he met his classes on the last day of the 1979 spring semester in a wheelchair, graded his final exams in the hospital and died two days after turning in the students' grades. Such dedication characterized his entire career.

Adoption center funded

Helping find permanent homes for adoptive children with special needs is the purpose of a regional adoption resource center being established by UMC's social work extension program.

The center will be funded for five years by a grant from the Children's Bureau within HEW. It will serve Iowa, Kansas, Missouri and Nebraska.

Food program evaluated

The impact of the \$7 billion federal food stamp program on the nutrition of low-income households is being evaluated by UMC economics professor Stanley R. Johnson under a \$245,345 grant from the U.S. Department of Agriculture.

The food stamp program, which began in 1964, has grown at a dizzying pace, with annual expenditures increasing from \$251 million 10 years ago to about \$7 billion this year, according to government statistics.

This growth is one reason the program's critics and proponents alike are interested in discovering how well it is working.

Dr. Johnson, along with co-investigator Karen Morgan, a UMC graduate now at Michigan State University, will analyze data gathered by the USDA on 20,000 families from throughout the U.S., not all of them food stamp recipients. They were interviewed as part of the 1977-78 household food consumption survey.

Uehling elected to board

UMC Chancellor Barbara Uehling has been elected to the board of directors of the American Council on Education. Her election came at the recent annual meeting of the council in Washington, D.C.

The American Council on Education, comprising more than 1,600 higher education institutions and national and regional education associations, is the nation's principal, independent nonprofit coordinating body for postsecondary education.

The council serves higher education administrators, students, and faculty members by providing national leadership for strengthening educational standards, policies, and programs.

Jobs

The following administrative, professional, and academic vacancies were listed with *Spectrum* as of Nov. 29. Those interested in a position should contact the appropriate academic department or personnel office.

UMC: Administrative associate I; asst. directors, public information (med. comm.), alumni activities; asst. manager, accounting services; asst. registrar; coordinator, student financial aids; counselor; engineer, physical plant; head resident; research specialist (5); senior accountant; senior information specialist; supervisor broadcast engineering, KOMU-TV; tv producer, KOMU-TV; student services coordinator/counselor—arts & crafts; senior research specialist; **UMca:** auditor; chemist; computer

programmer/analyst II; computer project manager (2); manager, financial reporting; scientific programmer/analyst II; senior research chemist; senior systems analyst; senior systems programmer; supervisors, bindery, reactor shift operations; systems analyst;

UMC Hospital: Asst. directors, nursing service (2), professional services; computer programmer/analyst II; head nurse (5); housekeeping supervisor (2); managers, management engineering, nursing office, programming, quality assurance, technical services; nurse anesthetist; nurse practitioner (7); nurse recruiter; occupational therapist; personnel associate; pharmacist (3); physical therapist; registered medical technologist; senior management engineer; senior computer programmer/analyst (3); senior systems analyst; senior systems programmer; staff nurse (50); systems analyst;

UMR: Coordinator, engineering services; asst. professor, petroleum engineering; lecturer, metallurgical, mechanical engineering;

UMSL: Student services coordinator/counselor; financial aid advisor; accountant;

UMKC: Clerk typist II; library clerk II; secretary; senior accounting clerk; activity coordinator, constituent relations; docent team assistant; fiscal assistant; information specialist; instructional development specialist II.

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UM reactor puts waste heat to work

On wet, cool mornings in Columbia, observant people can watch a rolling fog emanate from the cooling towers at UMC's Research Reactor, nestled in Research Park south of the football stadium.

Some think it's steam, while others believe it's a radioactive plume of air. But it's really old-fashioned fog, or moisture vapor, expelled from the reactor's cooling system. According to reactor officials a portion of that hot water has now been put to work, heating the reactor's newly completed addition.

The feasibility of using waste heat from the cooling system has been in the works for two years. The system cost about \$5,000 to install and will operate at an estimated \$500 a year savings, according to Don Alger, associate director of the reactor.

"But it's not so much the savings as it is a demonstration of the potential of using the waste heat," he says. "We'd like to heat the entire reactor this way, but it's more difficult because we'd have to convert the existing system. The real cost savings would come when we build another building here in Research Park and include the heating system in the original plans."

In spite of estimated conversion

costs of \$55,000, Mr. Alger believes eventually the savings will make that investment feasible.

"We have the potential energy to heat this building and a couple more like it," he says.

The waste heating system uses non-radioactive water—water that has not circulated through the reactor core. Air from the outside flows over coils heated by the water, which is about 38° Centigrade (100° F). The heated air is then forced into the room by blowers.

While the system is efficient enough to be the sole source of heat for the addition, steam heat has also been installed for those days the reactor is not operating.

"It must be looked at as a fuel saver, not as a replacement, since the reactor must shut down occasionally for routine maintenance," Alger says.

The new facility, which adds 2,200 square feet to the reactor, will house storage rooms, thus freeing old storage space for offices and laboratories. Costing \$280,000, it was built with reactor-generated funds from grants and service contracts.

The addition is the first major building renovation of the 13-year old reactor, the highest powered university reactor in the country.