

MIZZOU

WEEKLY

University of Missouri-Columbia / May 5, 1994

ON THE INSIDE

It's time to take a break before the Summer Session starts. *Mizzou Weekly* will resume publication June 16.

Page 6 Find out which offices are switching to summer hours between May 16 and Aug. 12.

Page 10 Chancellor Kiesler gives a presentation at the White House National Forum on Science and Technology.

To a higher degree

News correspondent Helen Thomas, surgeon J. Otto Lottes to be honored at commencement.

As the dean of White House correspondents, Helen Thomas closes presidential news conferences with her traditional "Thank you, Mr. President." As the featured speaker at MU's commencement ceremony, she will help nearly 3,000 new Mizzou graduates close out a chapter of their academic careers.

The commencement ceremony will be held at 1:30 p.m. May 15 in the Hearnes Fieldhouse.

Thomas will receive an honorary doctor of letters degree at the ceremony. In her half-century as a reporter for United Press International, she led the successful fight for the rights of women journalists. Thomas has written about every president since John Kennedy. She has traveled around the world several times with presidents Kennedy, Nixon, Ford, Carter, Reagan and Bush and has covered every economic summit.

This won't be Thomas' first trip to MU. She has received many national journalism awards, including the Missouri Honor Medal from the School of Journalism in 1989.

Dr. J. Otto Lottes of St. Louis, a Mizzou alumni, will be honored also for his dedication to the University and for his long career as an orthopedic surgeon. His pioneering work in treating bone fractures led to significant advances in the

field. Lottes will receive the honorary doctor of science degree at the commencement ceremony.

When he enrolled in MU's medical school in 1933, it consisted of one small room in McAlester Hall. During his 50-year career, Lottes received many medical awards for his service and research, and published numerous articles on his

research on bone grafts, tendon transplants and the use of the "tibial nail" he invented to repair bone fractures.

Since his retirement in 1982, Lottes has been an avid supporter of the University, serving on many advisory boards. His generous support for the J. Otto Lottes Health Science Library, named in his honor in 1985, has benefited hundreds of MU medical students. He is a very distinguished fellow of MU's Jefferson Club and a member of the McAlester Society. Lottes has been honored many times for his service to the University, including the 1986 Distinguished Service Award, the 1984 Faculty/Alumni Award and a 1979 Citation of Merit from the School of Medicine.

Honorary degree process is streamlined

Quite simply, the process is now simpler to nominate honorary degree candidates at MU. This year, for the first time, the faculty committee that oversees the process asked that nominations be limited to a one-page nominating statement and a one-page biography fact sheet, says John Miles, professor of mechanical and aerospace engineering and chairman of the honorary degree committee.

"The reason is to remove some of the burden from nominators. In the past, some nominations included 50-page dossiers," he says. That tremendous amount of detail may have inhibited some good nominations, Miles says, and adds that the new process allows more confidential nominations. "This way the nomination can occur without the nominee even knowing about it."

There are a number of stages in the nomination process. Long before Helen Thomas and J. Otto Lottes ever stepped to the stage of the Hearnes Center to accept their honorary degrees, the faculty committee began its work. Last fall, the group put out a call for nominations, then prepared a list of potential recipients which was forwarded to the chancellor's office. The chancellor then selects one or more individuals from the list, and they are approved by the UM System president and the Board of Curators. Ultimately, the selection is endorsed by the MU Faculty Council.

This year, the honorary degree committee received a total of 23 nominations, Miles says. "That is a considerably larger number than we have received in the past. I'm sure it's a result of the streamlined nomination process."

Anthony Lampe, left, and Adolf Schroeder were presented the 1994 MU Retirees of the Year award at the annual retiree luncheon April 26. Lampe retired in 1981 as a grants and contract officer and Schroeder is professor emeritus of Germanic studies.

Rob Hill photo



They keep going and going ...

*MU retirees lead busy lives
volunteering to help their communities.*

The secret to a successful retirement is not to retire, say Adolf Schroeder and Anthony Lampe, winners of the 1994 MU Retiree of the Year awards.

"The secret is to just keep on going—do what you do well," says Schroeder, professor emeritus of Germanic studies. During

Schroeder's nine years of retirement, his research on German-Americans has been prolific. He also has traveled extensively throughout Missouri to lecture and consult.

Lampe, who retired in 1981 as a grants and contracts officer, has served as a board member for the Mizzou Credit Union and as

president of the Missouri Symphony Society, leading it to become the first nonprofit organization to receive a Chamber of Commerce "Small Business of the Year" award.

"Actually, you are what you do," Lampe says. "I can't see myself sitting around and vegetating."

Chancellor Charles Kiesler presented the awards to Schroeder and Lampe at the annual retiree luncheon April 26, which drew 700 to the Hearnes Fieldhouse. The awards honor accomplishments since retirement, and are given to a former faculty member and a former staff member.

Schroeder—whose research concentrates

on oral histories, folklore and ethnic studies—has become a one-man outreach program on vital aspects of Missouri's heritage. He takes part in historical society projects and activities across the state and has helped rejuvenate the Missouri Folklore Society, now one of the strongest of such organizations in the country. Last month Schroeder, who established the University's German Heritage Archive, had two major exhibits on display in Jefferson City. He has received honors in recent years from numerous organizations including the Society for German-American Studies, the Midwest Archives Conference and the Missouri Humanities Council.

Schroeder and Lampe both credit their spouses for much of their success. "My wife, Rebecca, and I have for 50 years worked together on every project I've been involved in," Schroeder says. "I, in turn, have helped her with her projects."

Lampe says his wife, Bernadine, has provided him with "terrific" support in his many endeavors. Together they played an active role in establishing the Boone County Historical Society.

Lampe, who is also a volunteer minister, has an outstanding record of service to his church and community. For 17 years he served on the board of the Phoenix House, a residential treatment center for recovering alcoholics. Recently, the mayor of Columbia has asked him to serve on a cultural liaison committee for the year 2000 plan.

Lampe worked for the University for 16 years and was a charter member of the board of directors of the MU Retiree Association. Throughout his retirement he—like Schroeder—has never wanted to slow down or sit on the sidelines. "That wouldn't appeal to me," he says. "I like to get in there and make things happen."

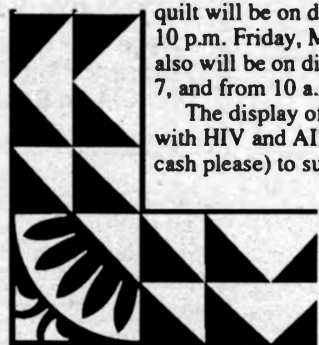
EXTENDED STUDY HOURS MAY 8-13

Students boning up for final examinations during May 8 to 13 can take advantage of extended open hours at Ellis Library, which will remain open until 4 a.m., and at Brady Commons, which will be open 24 hours a day (until 3 a.m. May 6 and 7).

In addition, residence halls seating areas will be open until 2 a.m.; the Hiit Street Market-Pershing Commons seating area will be open 24 hours a day; the Black Culture Center will be open until 2 a.m.; and the Memorial Union, where rooms are available for group study, until 11 p.m..

NAMES PROJECT AIDS MEMORIAL QUILT ON DISPLAY AT HEARNES

More than 25,000 individual three-by-six-foot memorial panels — each one remembering the life of someone who has died of complications related to AIDS — have been sewn together by friends and family members to make up The NAMES Project Memorial Quilt.



A portion (111 panels, measuring 12 x 12 inches) of the quilt will be on display from 10 a.m. to 4 p.m. and 7 p.m. to 10 p.m. Friday, May 6, at the Hearnes Center Fieldhouse. It also will be on display from 10 a.m. to 9 p.m. Saturday, May 7, and from 10 a.m. to 3 p.m. Sunday, May 8.

The display of the quilt helps raise funds for people living with HIV and AIDS and their loved ones. Contributions (no cash please) to support the bringing of the quilt to Columbia may be sent to: Kathy Murray, AO22 Brady Commons.

AN EVENING OF NEW AGE MUSIC

The Campus community is invited to an evening of new age music at 8 p.m. Wednesday, May 11, at Jesse Auditorium. This free performance will feature soloist Joyce Valentine performing her original compositions.



Valentine started her piano studies at an early age and gave her first full-length recital at the age of 6. She has studied at New York's Juilliard School and has performed at Carnegie Hall. Soon after completing her masters degree at the University of Missouri-Kansas City, she began composing. Through her command of the keyboard, Valentine brings new life to contemporary piano music.

The concert is presented by the University Concert Series, KBIA-FM and Tom and Anne Smith. Advance tickets are not necessary. For information call 882-3781.

Chancellor Kiesler receives mixed reviews from faculty

Members of the Faculty Council heard a report from Professor Gordon Kimber, chairman of the standing committee on administrative review, on the results of the faculty's evaluation of Chancellor Charles A. Kiesler.

In his opening remarks, Kimber noted that the response to the mailed-in questionnaire sent to ranked faculty had been "disappointing but typical." Of 1,750 questionnaires mailed, 304 replies were received, 210 of which contained written responses, Kimber said.

The mean score for each of 21 questions for which a numerical response was requested ranged from 6.1 for recognition of scholarship to 3.8 for soliciting faculty input. The overall mean for the question asking for an overall rating was 4.8, on a scale of 1 through 9, with 5 being an average response.

Noting that he wished the faculty re-

sponse had been larger, Chancellor Kiesler said the University is undergoing significant changes under his administration.

"There are enormous changes going on in our University, and it is a natural human response to resist them," said Chancellor Kiesler. "These negative responses may reflect that, and should not be considered a surprise. While it is also a natural desire to be liked, I don't feel the number of negative faculty should dissuade the rest of us from our high aspirations."

Commenting on the sparse response (15 out of 210) to the question regarding the ability of the chancellor to interact with the Board of Curators, Professor Kirby Miller said, "I find it remarkable that such a tiny number of respondents would comment on the chancellor's willingness and ability to stand up to the Board of Curators." He added that faculty members "seemed to be less concerned with the fact that Kiesler has

stood up to the Board of Curators, stood up to the president, prevented colleges and departments from being shut down, which was threatened two years ago, and prevented a further decrease in the size and enrollment of the University. All that has seemed to pass the overwhelming majority of the respondents by."

In other action, the council:

- heard a report from Professor Susan Flader on the progress on the plan to implement an environmental studies program at MU.

- voted to join the Missouri Association of Faculty Senates

- presented service award plaques to council members finishing their term of office.

- discussed and made changes to the recommendation to change the bylaws regarding the emeritus appointments.

- discussed proposed changes in the "Add a Course" policy.

- heard a proposal to provide financial support for professional development activities of non-regular faculty members.

Copies of Chancellor Kiesler's memo to faculty available

As a follow-up to a recent general faculty meeting, Chancellor Charles Kiesler sent a memo to all faculty that contained the substance of those remarks so as to communicate as broadly as possible on topics about which the faculty had expressed interest or concern. Since that mailing, some members of the staff have indicated they, too, would be interested in reviewing these remarks. Any employees wishing a copy of the memo may call 882-4523.

Black studies director accepts new post

Sundiata Keita Cha-Jua, director of the MU Black Studies Program and a faculty member in the history department, will join the Pennsylvania State University African/African American studies department this fall. Cha-Jua is credited with advances in the black studies curriculum, faculty recruitment and broadening academic activities during his six years at MU.

"These contributions have been carried along with a very promising research program, active teaching and untold service," says KC Morrison, vice-provost for minority affairs and faculty development. "MU will long be benefited by Cha-Jua's legacy and we are most thankful for what he leaves with us," adds Morrison.

"I am eager to advance my scholarly pursuits by moving into an academic environment that emphasizes the study of the world African experience from the perspective of political economy," says Cha-Jua. "Returning to a full-time faculty position allows me to focus more on research and teaching from that perspective."

Cha-Jua will continue his duties until August 31.

Chancellor visits Staff Advisory Council

Chancellor Charles Kiesler spent nearly an hour with Staff Advisory Council on April 28, covering topics from budget to health care. Here are some highlights:

Budget

MU's state budget process is going well, the chancellor said, with the exception of the Hancock II amendment effort. Now at the petition stage, Hancock II would reduce state appropriations to the University. If enacted, the amendment would result in a \$35 million cut in MU's base budget from the state the first year. In subsequent years, the budget would be about \$17 or \$18 million below current levels.

Performance ratings

"I'm in favor of performance ratings because they lead to good things for both supervisors and employees," Kiesler said. "Supervisors should be open and honest with employees." He hopes that the number of grievances could be reduced through better communication.

Kiesler agreed with the council consensus that appraisals are generally well received by staff, who appreciate the feedback. This kind of information is useful, Kiesler said, for charting progress toward goals.

Staff compensation

Work is under way to explore ways of structuring new employee categories. Instead of placing the most weight on how many employees one supervises, compensation would depend more on the expertise of employees or the stressfulness of their positions. "I don't see any negatives in this



Staff Advisory Council

WORKING FOR YOU

for staff," Kiesler said. "This approach would make it a lot easier for certain staff positions to be well paid."

Continuous quality improvement (CQI)

CQI groups are in place on campus and are planned at the system level, Kiesler said. Such groups are useful in his preferred approach of setting goals and then monitoring for progress toward the goals. For example, Kiesler said, he annually compares the time he spends on various projects with his highest priorities. This allows him and his staff to consciously manage time more effectively. Another example of CQI is the strategic planning process that academic departments are undergoing.

Health care

"I'm very pleased," Kiesler said, "with staff and faculty reactions to the new health plan." He said that the change could be a model for other institutions. Also, plan members are well pleased with the plan, according to patient satisfaction surveys.

"It's very constructive that we have undertaken these surveys and that they are be-

ing made public," Kiesler said. "The 92 percent approval rating is good for any hospital. But with the changes we've gone through recently, it's especially good." As a result of the survey, he said, a consultant has been hired to help reduce patient waiting times.

Managing resources

As a result of recent events, a management audit focusing on fiscal controls is in progress. When the report is completed, new and more rigorous management requirements will be implemented across campus. Kiesler stressed the importance of managing MU's resources effectively for several reasons, including long-term growth and success, and maintaining strong public support.

In other action:

- Bob Smith, staff advisory council chairman and a construction project manager with Campus Facilities, mentioned several topics covered at the systemwide staff council meeting held in Rolla recently: Topics included pension benefits; appeals procedures; performance appraisals; maternity leave; and staff incentives.

- The council's election committee representative presented a timeline: Nominations for the council will be accepted until May 13. Interviews will take place May 24-25. Ballots will be mailed July 12, and winners will be announced in *Mizzou Weekly* in late August.

- A reminder was given concerning Staff Development Awards: The application deadline is June 1. Winners will be notified July 1, but the money won't be available until July 15.

Faculty members explore new teaching techniques

Some students arrive at MU to discover that their lecture classes are larger than their home towns. And the teachers of those classes—some with as many as 500 students—have their own discoveries to make. They must discover whether their students are learning or feeling lost.

The so-called one-minute memo is one technique teachers can use to find out if they're making sense to their students.

"When you have a minute left in the class period, you ask each student to write down the most significant thing they learned today and what they still have questions about," says Bonnie Zelenak, director of the Learning Center. "By reading the memos you can see if the students get the big picture and what you need to work on next time. As long as the memos are brief you can scan through a large number of them in short period of time."

The one-minute memo was one of many ideas exchanged by faculty members who gathered for a retreat at the Lake of the Ozarks on April 22 and 23. The retreat was designed to help faculty improve student learning in large enrollment classes. Zelenak, the chairwoman of Mizzou's retention task force, helped organize the event, which was held at the Tan-Tar-A Resort and attended by more than 40 faculty members.

The retreat featured sessions on various topics including classroom technology, training TAs and understanding freshmen.

"In one session we watched a videotape about a professor who increases his students' comprehension by asking them to discuss concepts with each other during class," Zelenak says. "First he introduces a concept to the class. Then he presents a multiple-choice question regarding that concept. So if you're the student, you have to decide which answer is correct and then you have one minute to turn to your neighbor and try to persuade him or her that your answer is the correct one. A lot of students end up changing their answers. And the changes are generally toward the correct answer. By using this method, students all of the sudden are challenged to understand the concepts introduced to them. The professor found, by surveying his students, that this strategy improves not only their knowledge but also their confidence level."

In addition to faculty, four MU students attended the retreat to talk about their experiences in the large classroom setting.

"They talked about the great tendency to feel anonymous and lost in large classes," says Bill Bondeson, professor of philosophy and one of the organizers of the retreat. "The faculty members were very interested in hearing the students' ideas on improving lectures. The students emphasized that lectures should be more than just the transmission of facts. They want more from a lecture

than simply hearing things they could get out of a book. They want teachers to impart their values and their skills of analysis."

The retreat, which may become an annual event, was funded by the offices of the chancellor, provost, vice chancellor of student affairs and dean of Arts & Science.

The participants, most of whom teach classes of 200 or more, also discussed topics such as peer evaluations, student diversity and student learning outside the classroom. "The faculty members were enthusiastic about being there," says Zelenak. "They seemed to be excited and happy to interact with colleagues who care about the same issues they do. Some of them have already started trying new techniques in their classes."

CLASSIFIEDS

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LARGE HOUSE on quiet, private street. Three bedrooms, two baths, living & dining room, study, office, fireplace, deck, fenced wooded lot, flower gardens. Short walk to University. Partially furnished, central air, no smokers. Available in June. One-year lease preferred. \$800 a month plus utilities. Call 874-2967.

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The Classified Advertising Section is open only to faculty and staff members and retirees. A home phone number is required in all classified ads. No refunds will be given for cancelled ads.

Ads must be typed.

Rates: 30-word maximum \$3.

Publication deadlines:

No issues May 12 through June 9

June 7 deadline for June 16 issue

June 21 deadline for June 30 issue

Mizzou Weekly Classifieds: Make your check payable to University of Missouri and send to: *Mizzou Weekly*, 407 Reynolds Center, Attention: Tanya Stitt.



The Department of Residential Life cordially invites you to attend a Reception to honor: Lloyd T. Benedict for 35 years of service May 25, 1994, 2 to 4 p.m. Main Lounge, Wolpers Hall

Thanks for your patience while ...

We're building a better Mizzou!

We've told you about MU's 1,000 accessibility projects totaling \$8 million scheduled to be completed by January 1995.

We also have received \$4.1 million to begin work on campus buildings with critical maintenance needs. Several of the construction projects include:

- renovate Allen & Waters Auditoriums
- repave various parking lots
- reroof Parker Hall & Whitten Hall
- construct Maryland Avenue Parking Garage
- tuckpoint and masonry repair of Lowry Hall, Middlebush Hall & Schlundt Annex
- replace underground steam & electrical lines



Thank you for your patience!



Commencement, convocation ceremonies set

FRIDAY, MAY 13

- College of Veterinary Medicine, 3 p.m., Jesse Auditorium

SATURDAY, MAY 14

- College of Agriculture, Food and Natural Resources, 7:30 p.m., Jesse Auditorium
- College of Business and Public Administration, 5:30 p.m., Hearnes Center
- College of Engineering, 5 p.m., Jesse Auditorium
- Graduate School, 8 p.m., Hearnes Center.
- School of Health Related Professions, 6 p.m., United Methodist Church
- School of Law, 11 a.m., Jesse Auditorium.
- School of Medicine, 1 p.m., Jesse Auditorium
- School of Natural Resources, 5 p.m., Jesse Wrench Auditorium, Memorial Union

SUNDAY, MAY 15

- College of Arts and Science, 4 p.m., Hearnes Center
- College of Education, 9 a.m., Hearnes Center
- College of Human Environmental Sciences, 11 a.m., Jesse Auditorium
- School of Journalism, 4 p.m., Peace Park, west of Gannett Hall (In case of rain, Jesse Auditorium)
- Main Ceremony, 1:30 p.m., Hearnes Center
- School of Nursing, 9 a.m., Jesse Auditorium
- ROTC All-Service Commissioning Ceremony, 7 p.m., Townsend Auditorium

School of Journalism receives \$500,000 challenge grant to complete Lee Hills Hall

The Kresge Foundation has announced a \$500,000 challenge grant to the University of Missouri School of Journalism for completion of Lee Hills Hall, the new home of the *Columbia Missourian*. The first Kresge grant ever awarded to MU, it is contingent upon the school's raising \$2.2 million to meet the challenge.

"The Kresge grant is both a tribute to Lee Hills himself and a promise to future generations of Missouri students," Dean Mills, dean of the School of Journalism, said in announcing the grant. "The new building will allow us to expand the quality and types of programs for our students." The Lee Hills building project includes two new endowed chairs, one in community newspaper management and the other in business journalism, as well as new scholarships. The Kresge Foundation, a prestigious, private foundation, is

well known for making highly selective building grants, mostly to private colleges and universities. In 1993, the foundation received 777 grant proposals and awarded 174 grants totaling \$74 million. The Lee Hills Hall project is one of 24 grants awarded thus far in 1994.

Lee Hills Hall was initiated by a \$2 million challenge grant from the Knight Foundation in 1985. The school met that challenge with the support of more than 300 friends of Lee Hills, a Pulitzer Prize-winning journalist, as well as other journalism school alumni and supporters. In addition to housing the *Columbia Missourian*, Lee Hills Hall will be the new home of the school's photojournalism sequence, including electronic photo-imaging and digital equipment, state-of-the-art design laboratories, new classrooms and a conference center.

University Club, Campus Catering merged

In a continuing effort to enhance campus food services, the University Club and Campus Catering will merge and move under the management of Administrative Services. The merger is effective July 1.

"I am very pleased with the cooperation shown by all concerned to generate a management approach that will serve our need to be cost efficient, fiscally responsible and customer oriented" says Chancellor Charles Kiesler.

Currently University Club operations are being managed jointly by Roger Gafke, vice chancellor for Development and Alumni Relations and Kee Groshong, vice chancellor for Administrative Services. Catering is a function of Campus Dining Services, which is part of Student Affairs under Vice Chancellor Charles Schroeder.

Administrative Services is no stranger to managing dining operations. The division already has responsibility for retail food services at Hearnes Center and has managed the fiscal operations of the University Club since late last year. The University Club has realized a profit every month since the beginning of this year.

"The new arrangement means campus dining can focus on serving students while the University Club and catering concentrate on our other customers at MU," says Groshong. "This should enhance our ability to maintain the level of quality people have come to expect from the University Club."

Groshong adds his first task will be to recruit a new general manager for the merged operations

"Ellis Fischel saved my life."

Nancy Jones, Fayette, Mo.
College instructor and professional singer

"Ellis Fischel cared for me as a person, not just as a patient," says Nancy.

Nancy Jones believes in preventive medicine and has checkups every year. Nancy discovered in 1992 that she had a small tumor inside her breast when Ellis Fischel's mobile mammography unit detected the lesion. The biopsy revealed it was cancer. "I had no reason to suspect I had cancer," Nancy says. "I felt perfectly healthy."

Ellis Fischel's Cancer Screening Services checks healthy women and men for early signs of cancer. It's mid-Missouri's most comprehensive early detection program. It's surprisingly affordable, individualized and provides all the tests in one location. As an added convenience, the program offers the services of a mobile mammography unit.

"When friends tell me they fear cancer screenings, I tell them if it is cancer, you'll be able to get treatment quickly. If there's nothing wrong, you'll have peace of mind. But make the phone call."

Because Nancy's breast cancer was detected early, she had options for treatment. "Ellis Fischel has given me every reason to believe I will live a long and productive life."

Cancer Screening Services
882-8511

 Ellis Fischel
Cancer Center
The Staff for Life

CAMPUS COMPUTING

Short Courses

Coming May 12 . . .

If you missed the list of short courses in our April/May issue of the *Campus Computing Newsletter*, don't worry. Campus Computing is gearing up for another series of computing short courses, offered to eligible faculty and staff at no charge. These will be advertised in May and will be held during intersession.

Watch campus mail for a special Short Courses flier, INFORMU on MIZZOU1 (in the Short Course section under Computing Topics), and the *Mizzou Weekly* on May 12 for more information. Then, call us at 882-2000 to register.

Campus Computing

M I Z Z O U
PEOPLE

Bob Bender, professor of English and of women studies, and director of special degree programs, organized a session on "The New Agenda for Global Communication: A Demonstration Panel on Using the Internet" at the International Studies Association's 35th annual convention in Washington, D.C., March 28 through April 1. He was chairman of the session and presented a paper titled "Using the Internet to Create a Conference Proposal: The Future Is Not Quite Here Yet."

Michael Bernard-Donals, assistant professor of English, published "Mikhail Bakhtin: Between Phenomenology and Marxism," which appeared in the February issue of *College English* and "Mikhail Bakhtin, Classical Rhetoric, and Praxis," which appeared in *Rhetoric Society Quarterly's* February issue.

William Berry, Curators' Professor of art, has been accepted into the 1994 North Platte Valley Artists' Guild National Juried Exhibition at Scottsbluff, Neb. The show opens May 8 and runs through May 31. One of his drawings has been accepted into the 11th Gallery '76 National Juried Exhibition at Wenatchee (Wash.) Valley College.

Brooke Cameron, professor of art, will serve as one of five judges for the Federal Junior Duck Stamp Conservation and Design Contest, sponsored by the Missouri Department of Conservation and the Greater Lake Area Arts Council of the Lake of the Ozarks.

Tom Cooke, professor of English, published a study of medieval English tales in volume 9 of *A Manual of the Writings in Middle English 1050-1500*.

John Miles Foley, professor of English and classical studies, presented the keynote address at the annual meeting of the New England Society for Biblical Literature and American Academy of Religion held in Worcester, Mass., March 25. His topic was "Traditional Oral Register and Written Libretto." On March 28 he gave an invited paper on "Comparative Oral Traditions" at Amherst College.

Susan Flader, professor of history, attended the annual meeting of the Organization of American Historians, April 13-17 in Atlanta.

Howard Fulweiler, professor of English, gave a paper titled "Hopkins and Patmore: Sexual Sentimentality and the 'Woman Question'" at the Hopkins Sesquicentennial Conference at Baylor University March 25.

Elaine Lawless, professor of English, gave an invited lecture at Indiana University April 1 titled "Author/ized Texts: Can There Be a Collaborative Ethnographic Narrative?"

Geta LeSeur, assistant professor of English and women studies, has been awarded a major grant from the Arizona Humanities Council to continue her oral history project on Randolph, Ariz.

Kerby Miller, professor of history, presented a paper called "For Love and For Liberty: Irishwoman, Emigration and Domesticity in Ireland and America, 1815-1920" at the annual meeting of the Organization of American Historians April 15-17 in Atlanta. He is a member of the Immigration History Society's executive board.

**Faculty/Staff
FITWELL**

Summer 1994

*FITWELL- a comprehensive wellness program
for MU faculty & staff members*

- * Pre- and post-program body composition, flexibility & resting blood pressure assessment
- * Individualized exercise programs
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- * Dietary consultations
- * Nutrition education
- * Stress management education
- * Personal goal-setting guidance
- * AND MUCH MORE!

Choose among three sections:

6:15 - 7:15 am MWF

Noon - 1:00 pm MWF

4:30 - 5:30 pm MWF

Program runs June 13 - August 5

(No class Monday, July 4)

Cost - ONLY \$30 plus SRC user fees

Registration: May 9 - June 6 in 320 SRC.

Participation limited; register early.

For more information, call Lori, 882-0705.

Registration deadline: June 6

MU Recreational Services 320 SRC 882-2066 Student Affairs



**HOW IS YOUR
HEALTH CARE GOING?**

The MU Health Plan Oversight Committee Wants to Know.

Whatever your experience with the health plan, positive or negative, we need to know it in order to learn how the new system is working and where it needs to work.

Contact us by:

- Calling 882-2893 and leaving a message.
Messages will be transcribed and shared with the committee.
- Sending a note to the committee care of Darlene Schroeder, 319 Jesse Hall.
[This is the preferred means as it gives us a better record to act on.]
- Sending an E-mail message to one of the co-chairs.
Mark Hulse (CCJAZZ@Missou1) or Andrew Twaddle (ANSAR@Mizzou1)

While the Committee does not have the mandate or the capability to solve individual problems, we need your input to identify what needs fixing in the system. For your individual problems that are not quickly resolved by the Faculty and Staff Benefits office (882-2146), contact Kelly Ellis, Site Director for GenCare/Sanus (449-1116, ext. 101). Let us know what kind of a response you get.

Members of the Committee

Jane Cooper
Philip Peters

William Griffin
Bob Smith
Rhonda Butler

Mark Hulse
Francis Sentilles
Pauletta King

Lanis Hicks
Lisa Wimmenauter
David West

Lloyd Shackelford
Andrew Twaddle

Summertime, and the hours are different

Summer will soon be here, and so will summer hours. Beginning May 16, many campus offices will be open from 7:30 a.m. to 4 p.m., with a half-hour lunch. Regular hours of 8 a.m. to 5 p.m. will resume Aug. 15.

Not all departments and offices change their hours, however, so check the list to be sure.

7 a.m.-4:30 p.m.

Office of Undergraduate Studies

7:30 a.m.-4 p.m.

Academic Support Center
Accounting Services
ADAPT
Agricultural Economics
Agricultural Education
Animal Sciences
Art History and Archaeology
Arts and Science Dean's Office
Atmospheric Sciences
Business and Public Administration
Business Services
Campus Dining Services (except director's office)
Center for Educational Assessment
Center for Independent Study
Center for Student Involvement
College of Education
Community Development
Economics
Environmental Design
Environmental Health and Safety
Extension and Agricultural Information (main office)
Forestry
Geological Sciences

German, Russian, and Asian Studies
Health Related Professions
Hearnes Center
Honors College
Human Environmental Sciences
Environmental Design and Consumer and Family Economics Extension
Food Science and Human Nutrition Extension
Human Development and Family Studies Extension
Textile and Apparel Management Extension
Human Resource Services
International Programs and Studies
International Student and Scholar Services
Journalism/Editorial
Labor Education Program
Laboratory Animal Medicine
Learning Center
Mathematics
Natural Resources Student Services
Parking and Transportation Services
Payroll, Cashiers and Student Loans
Physics and Astronomy
Political Science
Procurement/Materials Management Program for Excellence in Teaching
Psychology
Publications and Alumni Communication
Radiation Safety
Religious Studies
Residential Life (except administration)
Rural Sociology
Sociology
Soil Science
Statistics
Telecommunications
University Extension Conference Office
Veterinary Biomedical Sciences
Vice Provost for Extension

7:30 a.m.-4:30 p.m.

Educational Administration
History

7:30 a.m.-5 p.m.

Admissions and Registrar
B&PA Development
Campus Computing
Campus Writing Program
Financial Aid
Graduate School
Office of Research
Office of Sponsored Programs Administration
Office of the Provost
Residential Life Administration
University Events
Vice Chancellor for Administrative Services

7:30 a.m.-5:30 p.m.

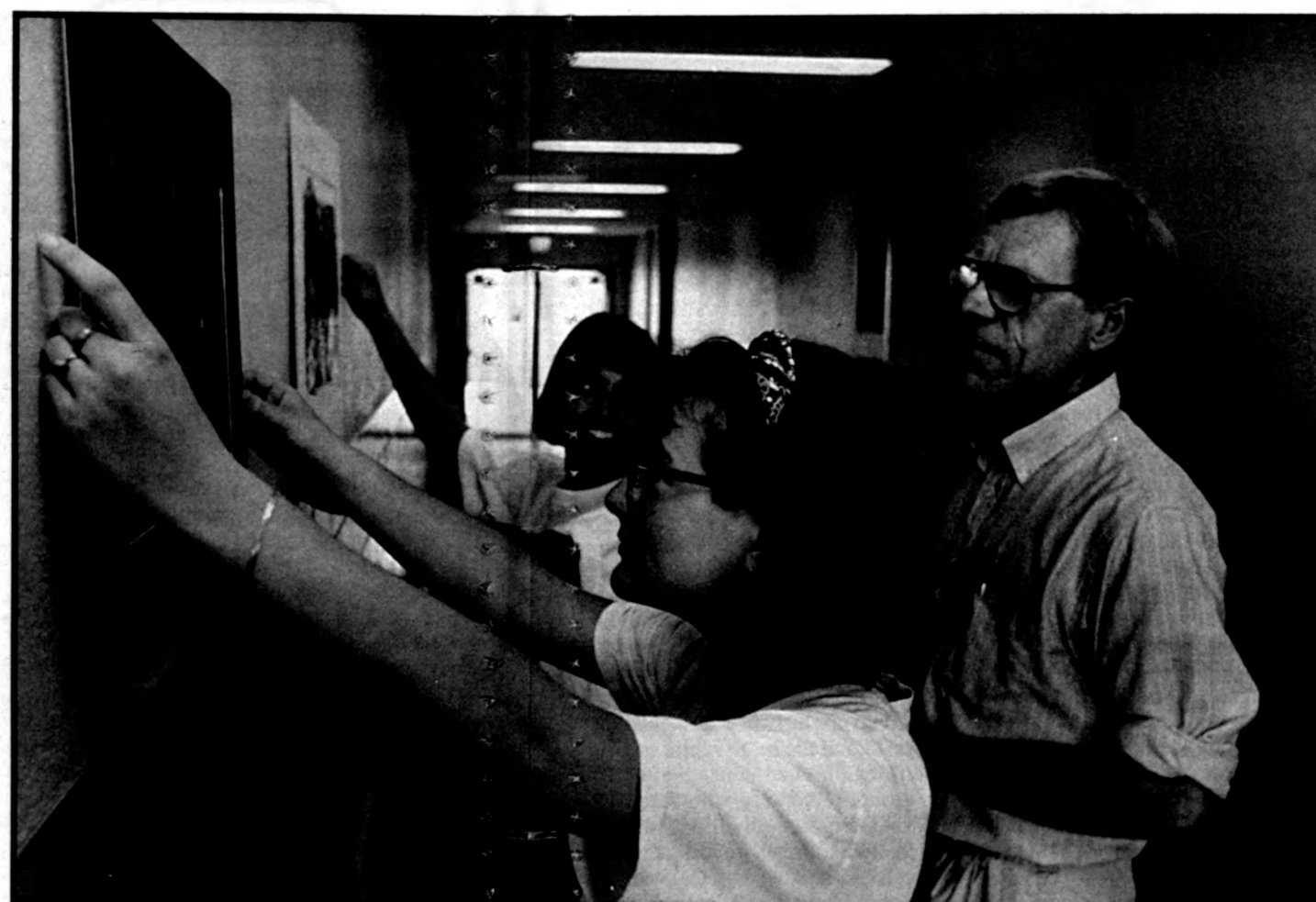
Continuing Professional Education
Vice Provost for Extension

8 a.m.-4:30 p.m.

Business and Public Administration
Dean's Office
Counseling Center Reception Area
English

8 a.m.-5 p.m.

B&PA Financial Research Institute
Campus Dining Services Directors Office
Fisheries and Wildlife
Parks, Recreation and Tourism



John Preus, coordinator of the Brady Gallery, oversees the hanging of art work April 20 by Jenny Simpson, foreground, a senior from Columbia, and Nellie Nash, a freshman from Jamestown, Mo. The student work is on display in the Learning Center Writing Lab located on the second floor of the Arts and Science Building, to illustrate parallels between the writing and the visual processes. Some of the work may become part of a permanent collection displayed in the building.

Rob Hill photo

The Computers & Writing Conference

May 20-23, 1994

Pre-Conference Workshops
Friday, May 20, 1994
2 to 5 p.m.

Workshop 1 with Judith Kirkpatrick
The First Four Weeks in a Computer Mediated Composition Classroom: Integrating Computer Skills into the Design and Sequence of Writing Assignments.

Workshop 2 with Michael McKean
A Model for Integrating Online Resources Into a Beginning Journalism or Creative Writing Course.

Workshop 3 with Richard Selfe, Karla Kitalong and Allan Heaps
Exploring Resistance to Technology: Developing Models for Faculty Involvement in Computer-Supported Communications Pedagogy.

Post-Conference Workshops
Monday, May 23, 1994
1 to 4 p.m.

Workshop 4 with Bill Condon, Michael Day, Jeff Galin, Susanmarie Harrington, Molly Hepler, Joan Huntley, Paul LeBlanc, Rae Schipke and Paul Taylor
Interactive Text: Helping Teachers Design Educational Software For Their Own Learning Environments.

Workshop 5 with Giles Slade
Michelangelo's Pocketbook: How Electronic Texts Challenge the Rules of Intellectual Property, and the Renaissance Ideology of Genius Which Underlies Them.

Workshop 6 with Roy E. Roper, Sue A. Dole, R. Edward Dole, and Nancy Hyland
Building Collaborative Relationships Among Rural Teachers.

The on-site conference will include speakers, concurrent sessions, workshops and exhibits. The online conference is scheduled to run April 29 through June 12. It will include discussion about important issues in the field using Electronic Forum. This year there will also be real-time events, conference sessions and social gatherings, held on MediaMOO, a textual virtual environment. For more information, call Eric Crump at 882-3148 or by e-mail at LCERIC@MIZZOU1.

REGISTRATION FORM Computers & Writing

Name _____
School or Business _____
Address _____
City, State & Zip _____
Phone _____
Electronic mail address _____

Note: Anyone who provides an e-mail address will receive information about how to join the online conference.
Fax: _____

Check one:

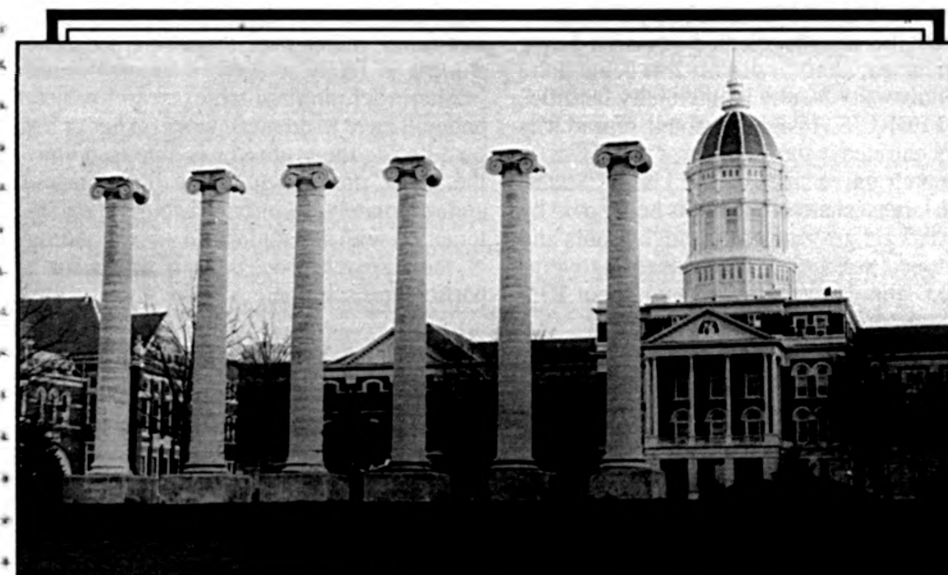
- Regular (includes 3 meals and access to the online conference) \$145.
 Student (includes 3 meals and access to the online conference) US \$75.
 Online only (April 29 through June 10) \$30. Participants must have access to the internet and be able to use telnet to login to a remote host computer. Note: online-only participants should be sure to include an e-mail address above.

Workshops (\$30 each):

Pre-conference: (Indicate 1st and 2nd choice of the 3 workshops)
_____(1) _____(2) _____(3)
Post-conference: (Indicate 1st and 2nd choice of the 3 workshops)
_____(4) _____(5) _____(6)

Total Amount Enclosed

Please make checks payable to the University of Missouri and mail to : C&W Conference
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Planning strategy: Research — purpose, conduct, funding

By George A. Russell, President, University of Missouri

Delivered: Board of Curators Meeting, Kansas City, Missouri, March 31 - April 1, 1994

As we start this report, I want to acknowledge and thank Curator McHugh for the continuing opportunity to focus on research during 1994. Research and creative activities distinguish the 150 or so major research universities from the thousands of other higher education institutions in the United States, and I am convinced that the role of these research institutions is critical to the future health and welfare of this nation.

The Board's willingness to devote substantial time to the University of Missouri's role in research is deeply appreciated. It adds to our mutual understanding and makes an important statement at a time when the public's attention is focused sharply on our role in undergraduate education. We can and must improve our performance in undergraduate education, but this change must not diminish the unique role of the University as one of the nation's major research institutions.

A brief history of the development of federally-sponsored research

Although some federally sponsored research was conducted on the University campuses in the early decades of the 20th century, it was the role of academic scientists during WWII that convinced national policy-makers that there was "a direct link between the seminal role basic research had played in ending hostilities and the need to develop creative solutions to major social problems." [The Government-University-Industry Research Roundtable, Science and Technology in the Academic Enterprise: Status, Trends, and Issues: A Discussion Paper (Washington, D.C.: National Academy Press, 1989) pp. 1-4.]

The first five to ten years after WWII were exciting times for scientists, as the bond between universities and the federal government was being forged. At the end of WWII, the major support for university research was provided by the military agencies. There was no NSF. In a few years, NSF would be formed out of a group that was located primarily in the Office of Naval Research. To some extent this was fortuitous, because the Chief of Naval Research and his strong staff believed in supporting the best people in research. They believed that the people doing research knew more about which problems were important than did all of those who wanted early payoffs. I had the privilege of being in ONR when some of the decisions about research were being made. It was an exciting place to be.

Such an easy concept was not easy to sell — but it was sold in the Office of Naval Research. The Navy thus became the first major source of support for the type of research that universities wanted to do — that which fit best their unique role in graduate education.

The ONR provided funding for cyclotron research at Berkeley and betatron research at Urbana without a hint of anything useful for military applications. Support at Urbana for particle research and betatron development lasted more than two decades with

hardly any reporting of anything other than what was done and who was supported with the funds provided by ONR.

Today, almost half a century later, the strength of research in the United States is a result of the decision to fund research of good people rather than research for the results that might lead to an early technical use for the military. After the discovery by Bardeen, Brattin, and Schockley of the point-contact transistor, for which they were given the Nobel Prize in 1951, a number of other military agencies began significant funding of research at universities in all kinds of materials science.

However, the task of translating scientific discovery of a fundamental nature into a marketable product was still left to industry. A giant in the transition of the first crude transistor into the micro-chips we know today was Texas Instruments and, quite naturally, a number of faculty members were consultants to TI. Later came the culmination of the biological research that established the double helix structure of the DNA molecule that led to the Nobel Prize for Crick and Watson in England, and the importance of NIH grew rapidly in importance for funding university research.

Today, the contributions of university research to economic well-being and health are widely recognized. Basic discoveries in the physical, biological, and mathematical sciences over the past century have provided the foundation for both rapid increases in per capita income and medical advances that have dramatically increased life span and alleviated pain and suffering. The substantial role of university faculty in important discoveries provides a highly visible and important rationale for continued emphasis on research in universities. Equally important, albeit less visible, is the research effort directed to the improvement of social institutions and our cultural and artistic heritage.

In research, the role of the major research universities is unique. I prefer to view research as divided into two types, "insight oriented" and "answer oriented." Insight-oriented research deals with gaining an understanding of basic processes and characteristics of whatever is under investigation — whether physical, biological, mathematical, social, economic, or political in nature. Three major scientific discoveries over the last 100 years — the nuclear atom, the solid state transistor, and the DNA molecule — have transformed this world economically and politically, and they are the result of insight-oriented research. In all cases, researchers were looking at basic processes and characteristics of materials.

Answer-oriented research, as I view it, is a search for answers to specific problems. It is research for turning devices and services into marketable products, and is the lifeblood of our economy.

The benefits of insight-oriented research, while fundamental to our longer term welfare, usually require much longer times to display how useful they are, if they ever are, for individual projects, and are much less clear in their market implications.

This differentiation has provided the foun-

ation on which the United States has forged a powerful three-way research partnership among research universities, industry and the federal government. Industrial organizations are profit firms and they have strong, direct, and clear incentives to invest in answer-oriented research — and they do so.

However, most of these same firms will collectively under invest in insight-oriented research. Why should they invest large sums in expensive projects with uncertain outcomes that may not lead to profits for many years, if ever? Thus, for insight-oriented research, we have turned to the other two major players. The federal government has been a major funder of basic research that is conducted for the most part by university faculty in university facilities, federally sponsored research centers or government laboratories across the nation.

How big has U.S. research become? Our country spent a total of \$161 billion on research and development of all types in 1993. How was this research funding distributed between insight- and answer-oriented research? At \$135 billion, answer-oriented research received about 84 percent of the funding. Insight-oriented research received about \$26 billion (16 percent).

Of the insight-oriented research being conducted, almost two-thirds is being done by university faculty in university facilities or FFDRCS. Insight oriented research is concentrated in the faculties of the 150 or so research universities in the United States. The largest share of the bill is being paid by the federal government through grants and contracts and direct expenditures in government labs. Universities put up about \$3.5 billion but spend about \$16.4 billion.

Models of research at the University

Now let me turn to the process of research at a typical research university. Even though there are infinite variations depending on the discipline, the project, and the faculty member, it will be helpful to focus on at least two basic models of how insight-oriented research is conducted: (1) the engineering, physical sciences and biological sciences model, and (2) the arts, humanities and social sciences model.

Research in engineering and physical and biological sciences is often "laboratory-intensive," even though there is a healthy investment in theoretical studies also. This means that the research will often require sophisticated equipment, such as the latest synchrotron radiation source (or super computers for our computational colleagues), and cutting edge techniques, such as, genetic manipulations of DNA. In addition, "hands" to operate the equipment or perform the techniques are also needed. These hands are our graduate students, post-doctoral associates, and technicians (and undergraduate students on many occasions). The major research professor must spend much time in developing research ideas, writing proposals to secure funding, and writing research papers to summarize and share results with others in the particular field.

As new graduate students join this

professor's research group, they are often trained in the use of the equipment or the techniques by more senior graduate students, post-docs, and the professor. The professor will conduct numerous weekly research group meetings in which theory and other aspects of the ongoing research will be discussed. The process becomes a team effort, and the new graduate students thus serve apprenticeships, after which they are sufficiently expert to conduct their own research for a thesis and also train newer students. The graduate students undergo a sort of traineeship in which they are mentored by the professor and the more senior members of the research team. Once a student leaves the group, preferably with the PhD degree in hand, he or she will usually be more valued by industry, government or other research universities for the knowledge gained about how to conduct research (the process of research) than for the information acquired in the conduct of the professor's specific projects.

Research and creativity in the social sciences, arts, and humanities also involve a strong and very time-consuming mentoring relationship between the student and the professor, but it is much more likely to be individual rather than team oriented. The student is likely to have a greater initial burden in defining a suitable research project and will have to do more work on her or his own before the professor is able to review the work, provide guidance for changes, and, ultimately, to impart through their interaction with the student an understanding of the research process as it works, for a particular discipline.

Obtaining research support

As I mentioned earlier, obtaining external funding for a research project is an important and critically essential component of conducting research in most disciplines at a major research university. We have already seen that the federal government provides much of the funding for insight-oriented research in the United States, and, although it is not equally available in all disciplines, it is absolutely essential that any major research institution compete effectively for this support.

How does a faculty member secure grant or contract funds for the people and equipment necessary to bring a project to fruition?

Starting with the inception of a research idea, a faculty member must consider the "fundability" of the research project. In order to take the germ of the research idea to the level where it is nationally competitive, our professor, or increasingly a research team, will often apply for internal research funds — small amounts provided by the university for the conduct of pilot projects either to demonstrate a project's feasibility or to collect necessary preliminary data for an external proposal. As "seed money," this use of university funds is extremely important, and is a major purpose of the \$4 million per year being invested by our Research Board. Here, professors from many different disciplines, who have solid track records, pass judgment on their aspiring colleagues.

Concurrent with this preliminary stage, the professor must conduct a quite different "mini-research project" to identify agencies or industries which may be willing to fund the overall project. Possible sources of external funding include:

- Government agencies, such as NSF, NIH, EPA, ONR, AFOSR, AROD, ARPA
- For-profit corporations
- Foundations and not-for-profit corporations
- Trade groups or professional associations, such as the Petroleum Research Fund of the American Chemical Society
- Federally funded research centers, such as Oak Ridge National Laboratories
- State or local agencies, such as the Department of Natural Resources

From this bewildering array of possibilities, the professor must select those most likely to fund the project. Proposals are then written, revised and re-written, making certain that the project corresponds to the goals and missions of the funding agencies. Phone contacts with project officers at the agencies are often crucial in assuring survival of at least an initial screening of the proposal. Finally, the proposals are submitted to the granting agency through the appropriate university channels, with accompanying forms and signatures included.

For the most part, the proposals will then be subjected to detailed and fairly time-consuming peer review. First of all, the

granting agency mails the proposal to three to five reviewers who are qualified to assess the scientific and technical merit of the research topic described within the proposal. Assuming favorable responses from these reviewers, the proposal is then reviewed by a panel convened by the granting agency (usually in Washington, D.C.), where it will compete with other highly ranked proposals. This final review panel, also comprising scientific peers, will rank order the top-rated proposals and establish a cutoff level for those to be funded. This extensive review process will take six months or longer to complete. Depending upon the agency and area, the probability of funding for a proposal may be as low as one in twenty or as high as one in three, or one in two — the later more likely for renewal proposals. When an agency funds a proposal at UM, it is a contract between the agency and the Curators of UM with the agency and the Curators agreeing on who the principal investigators (PI) will be.

For NSF, a March 1994 article in *Science* magazine reports that only 21 percent of the proposals submitted to the agency receive funding and many of these receive less than the requested amounts — and many are second and third-time submissions. Indeed, the time and energy devoted to the NSF peer review process is so great that the agency is experimenting with ways to decrease the burden on both NSF staff and the thousands of university faculty members who contrib-

ute enormous amounts of time to make the process work.

Assuming the proposal is approved for funding, there may still be some anxious moments as the budget is scrutinized by the funding agency, for budgets are often reduced in order to fund as many worthy proposals as possible. The agency will also make sure that the support for the work will be provided by the Curators.

Once a proposal is funded, the real work begins; the project must be initiated in earnest, with laboratory personnel, equipment, and supplies to be acquired for the project, with papers needing to be written, and presentations made at professional meetings. Of course, the professor will want to continue the research project, so securing continued funding becomes the next goal in a never ending process.

Benefits of research to the University

I have described the benefits of university research to those outside the university, but what, more narrowly, are the benefits to the university itself? I suggest the following:

Teaching: Much has been written about the interplay of research and teaching at the academy, and I will not belabor the point. Needless to say, I concur with those who claim that research injected into the classroom, certainly including the undergraduate classroom, stimulates both students and in-

structor. However, as I have already indicated, the truly strong and symbiotic link between instruction and research at the university lies in graduate programs. Indeed, the PhD is the research degree, and it is both efficient and necessary that the training of those in these programs include the conduct of research in order to master the process of research. The two are inextricably interlinked.

Economic benefits: By obtaining external funding for a research project, a professor provides resources for achievement of an essential part of the university's mission, that is training of graduate and often undergraduate students. Direct costs from the grant support the salaries of the researchers themselves, and the acquisition of modern instrumentation, which in most cases becomes university property. The indirect costs included in the budgets of externally funded projects allow the university to recover a part of its investment in providing the research infrastructure. In The College of Engineering of a major university with which I was once associated, 80 percent of the costs of a graduate student's work in obtaining a PhD was borne by research grants and contracts.

Prestige: The results of a university's research and creative efforts play a unique role in enhancing the image of a university, and this in turn has a reinforcing effect on

Please turn to Page 8.

Chancellor's review of external funding at MU

Here are a few things to keep in mind when looking through these tables, which contain information specific to MU:

AAU rankings

The University of Missouri-Columbia's achievements place it solidly within the AAU. For example, MU ranked 10th among public AAU members in the amount of funding it received from the USDA in fiscal year 1991 and 24th in the amount of funding it received from NIH.

"We have high aspirations for the future," says Chancellor Charles Kiesler, "but we also have much to be proud of now."

Observations on MU's competitive research support submissions

■ The five-year success rate, 38 percent, has varied little during this period (1989-1993).

■ MU's success rates are similar to national averages for individual federal agencies, such as NSF, NIH, USDA and DoED, which account for most of our federal funds as illustrated by 1992 data.

Reporting approaches

The financial data in these tables are useful as an overview. However, readers should be aware that the data may appear to float due to differences in common statistical measures.

■ In some cases, total funding for a grant may be reported as new dollars in a particular year, though the income will be accrued and spent over more than one year.

■ Another format is that of grant budgets for a given year, which are planned expenditures reported at the beginning of the year.

■ A third format is actual grant expenditures, which are reported at the end of the year and are nearly always less than their projected budgets.

Number of active awards at MU, 1989-1993.

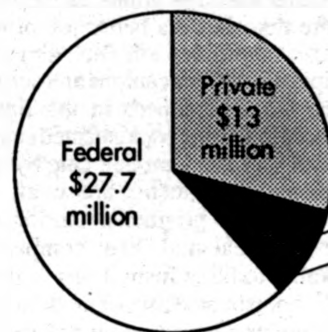
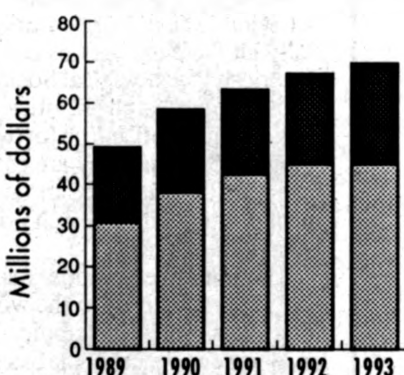
1989	1,693
1990	1,717
1991	1,779
1992	1,787
1993	1,834

Number of submissions from MU, 1989-1993.

1989	1,405
1990	1,438
1991	1,619
1992	1,575
1993	1,534

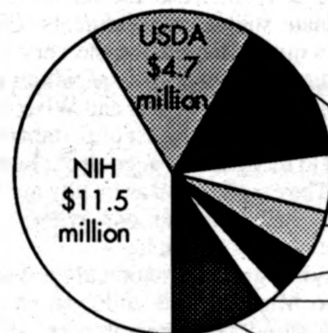
Total support by purpose, 1989-1993. (In millions of dollars)

	Research	Instruction & Service	Total
1989	30.8	18.3	49.1
1990	38.0	20.4	58.4
1991	42.4	20.8	63.2
1992	44.9	22.3	67.2
1993	45.0	24.6	69.6



Research support by sponsor type, 1993. (In millions of dollars)

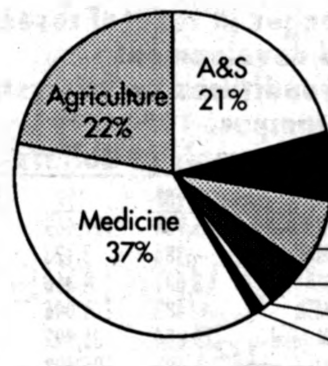
Federal	27.7
Private	13.0
Missouri	2.2
Other	1.9
Total	44.8



Federal research support, 1993. (In millions of dollars)

NIH	11.5
USDA	4.7
NSF	4.0
DoE	1.7
VA	1.4
DoD	1.1
ED	0.6
Other	2.6
Total	27.7

Distribution of federal research dollars among top seven MU divisions, 1993. (As a percentage)



Medicine	37
Agriculture	22
Arts and Science	21
Graduate School	7
Engineering	7
Veterinary Medicine	5
Education	1
Other	1

improving the quality of its research and other programs. As the prestige of an institution increases, it becomes easier to recruit and retain the very best faculty and to attract the most promising graduate students. Moreover, success breeds success in grantsmanship. The greater the institution's research reputation, the easier it becomes for its faculty to find open doors at funding agencies and good role models among their faculty colleagues.

Environment: Finally, research and creativity make a university an exciting, stimulating, and demanding environment in which to teach, learn and work. We are at the cutting edge, and we know that we have the potential and responsibility for developing the new knowledge on which to build a better tomorrow for our children and grandchildren. I encourage all Curators to spend some time in our research laboratories. The students will give you a taste of the excitement they have for this sort of learning environment.

Research at UM in the past several years

Because the University of Missouri is the only public research university in the state, and because it is such an important part of graduate student support, it is essential that we monitor our performance carefully. That monitoring, I believe, entails a comparison with the best, the public institutions of the AAU. If we are faltering we must begin corrective action. The comparison I like to make is how we fare in any year in the total federal expenditures by the public AAU institutions.

First, let us look at the absolute change in a ten-year period, 1984 to 1993, for our externally sponsored research in the four-campus system. Externally sponsored research expenditures increased 122 percent, from \$29 million to \$65 million. This appears to be a rather healthy growth during the decade. Our indirect cost recovery also had a healthy increase and now generates more than \$10 million per year for the system.

Let me now turn attention to a comparison with our colleagues in the public AAU institutions. Unfortunately, my comparison goes from 1981 to 1991 because good data from all AAU institutions comes to us slowly, more slowly than I would like. According to total federal R&D expenditures made in the year 1981, Missouri ranked 23rd out of the 29 institutions. And, we received only 44 percent of the average of all AAU institutions. By 1991, we had dropped to 26th out of the 29 institutions. And, in 1991 we received only 34 percent of the AAU average. From 1976 to 1991, the latest date for which I have reliable data, we have ranked in the lower 25 percent of the AAU institutions, generating less than 50 percent of the average for AAU schools. You can see from this why I am so determined to make the Research Board concept work and why I believe it essential to get the endowed professorships and chairs in place so we can attract more of the people to UM who are like the best we have now.

Conclusions reached

We are not doing as well as we should. If we are to reverse the trend, we might wish to speculate on what brought us to this point. I believe there are several possible causes:

■ When we allowed our faculty salaries to fall so far behind those in the best institutions, young, rising stars that might today be very competitive for federal support did not join UM. Even though for 20 years we have said that faculty salaries are our highest priority item, we never took the necessary

steps in the 17 years I've been here to really attempt to solve that problem until 1991. I believe the 5-year financial plan will help substantially, but it will take several years to achieve what needs to be done. Attitudes will have to change, and the Research Board will be helpful. If we obtain state support for named professorships and endowed chairs, we have yet another opportunity to increase our effectiveness in obtaining research support. And, it doesn't take many additional first-rate faculty to bring about change. One has but to look at what UMKC did when the campus concentrated on getting a very small number of very good researchers.

■ What has been said about salaries can be repeated for faculty support, both in technical personnel and equipment, as well as libraries. Also, a better way of providing computer support, a matter we are pursuing vigorously, can be helpful.

■ One thing that may not be changeable: The University of Missouri consists of four campuses, and, in comparison to departments in many of the other AAU institutions, our departments of math, chemistry, physics, political science, and on down the list are relatively small. This factor was perhaps not so important when most grants were provided for individual investigator projects. But this situation has been and continues to change. Increasingly, granting agencies are investing their money in team projects involving several investigators from the same discipline and, in many cases, in multi-disciplinary teams of researchers. In this environment, critical mass and absolute size are important. What does this suggest? It suggests to me that we need to be more imaginative and aggressive in finding ways to go after the large grants and that this will require that we do a better job of working together across departments, divisions and disciplines within a campus and across campuses. UMC is superb in the Basic Life Sciences in sharing sophisticated equipment, and can serve as a model. One by one, our chemistry departments are small, but all four offer PhD programs, and together we have a critical mass that compares most favorably to other institutions in the AAU. More sophisticated uses of modern telecommunications systems, some reorganization, and some seed money may help us pull the pieces together.

■ I believe that another common challenge is to increase the attractiveness of graduate student appointments. Our campuses must compete for the very brightest graduate students, many of whom are now going to the Michigans and Wisconsin.

■ Finally, and most important of all, we need to recognize how good our best people are. They are as good as faculty members in any of the best institutions. What we need is more of the top people.

By bringing internationally known scholars to Missouri, our endowed chairs program could boost research on all of our campuses. Those who would fill the endowed chairs would serve as catalysts and models for others. This is a prime reason why I continue to make funding for this program a major priority.

Changes in federal research and development expenditures by UM system by campus, 1981-1991. (In thousands of dollars)

	1981	1991	Change
MU	15,934	27,463	72%
UMKC	386	3,123	791%
UMR	3,081	4,360	15%
UMSL	483	1,046	117%
UM Total	19,884	35,992	81%
AAU Average	46,691	105,408	126%

Perspective of the social and behavioral sciences

By Charles A. Kiesler, PhD

An invited presentation at the White House National Forum on Science and Technology at the Institute of Medicine in Washington, D.C., Jan. 31-Feb. 1, 1994.

I am pleased to be here, and I am pleased to represent the social and behavioral sciences. There are only a few of us at this meeting, but this is not surprising. The social and behavioral sciences have always had a somewhat uneasy partnership with both the physical sciences and the life sciences. We have had a better partnership with technology and engineering. But in the late 1940s and early 1950s, when much of current national science policy was being sketched out, planners had serious questions about whether to include the behavioral sciences in NSF, NIH and NIMH.

However, by 1982, a National Academy of Sciences report, *Behavioral and Social Sciences Research: A National Resource*, concluded that, "It does not seem possible to draw any clear lines between the scientist looking at the physical and biological world, and another kind of scientist concentrating instead on his or her own species."

The social and behavioral sciences are useful. If we were not here, we would be missed. Our usefulness includes the impact of neuropsychology on the progress of the neurosciences; the impact of cognitive psychology and the cognitive sciences on computer science and electrical engineering; and the impact of behavioral sciences on agriculture, through agricultural economics and rural sociology.

So, our influence is not isolated. I want to do three things today. The first is to describe a recently developed consensus on funding priorities in the social and behavioral sciences. Second, I'd like to mention some useful methods and approaches to allocating resources and measuring progress in science and other kinds of programs—a value-added approach. Third, I'll describe the usefulness of the social and behavioral sciences in questions of science policy and priorities.

Consensus on funding priorities

The general public often strongly criticizes the lack of priority lists in science. I have been involved in some discussions of research funding priorities, and consensus is very difficult to develop. However, the public is increasingly less willing to support science for its own sake, and certainly not with a blank check.

Recently, a group of almost 70 social and behavioral science organizations—essentially all there are—was convened by the American Psychological Society to address the issue of research priorities. Those meetings continued off and on for two years. This group wrote what they are calling the Human Capital Initiative, an umbrella document dealing with research priorities in the behavioral sciences.

The initiative comprises six critical areas: (1) productivity in the workplace—a long standing research topic; (2) schooling and literacy—most of the basic research on learning has come through behavioral and

social sciences; (3) the aging of society and the problems this entails for society; (4) drug and alcohol abuse; (5) violence in America; and (6) health in America. The role of the behavior and social sciences in health is very broad. It includes such areas as the design of our health-care system and medical compliance. About \$30 billion to \$40 billion a year is wasted when people do not follow medical regimens.

Groups in each of these six areas continue the work, each one trying to lay out a research agenda. They have published two agendas so far. One is called, *Vitality for Life, Psychological Research for Productive Aging*. And the other is called *The Changing Nature of Work*.

Just to give you a sense of this consensus effort, let me tell you the five major research facets under the *The Changing Nature of Work*. One is changing technology, and workers' adaptation to it. Another is the social organization of work—the way work is organized in other countries has challenged much of what we think in America about work. Another topic is skill training and work expertise, adapting to the growing work force diversity. The last area is productivity and worker health.

There has been a great deal of research in each of these areas during the past several decades. The behavioral scientists are saying: If we have to choose priorities, these are our chosen priorities for research investments. This effort looks substantially like strategic planning in research.

Methodological advances

One of the major research problems in the social and behavioral sciences is the sheer breadth of the questions approached and the multiple levels on which problems can be, and are, researched. We deal with human beings in their own environment. As objects of research, they are complex; and they are typically (some say always) not well controlled. In short, we do research that has a good deal of signal noise in the system, both on the independent variable side and the dependent variable side.

As a result, I believe we have developed a number of methodological advances that relate to measurement of complicated phenomena. For example, there is a separate field now called evaluation research, which started out trying to measure the outcomes of complicated programs—often public programs. In recent years, it has homed in on the more general development of program evaluations. These can be as narrow as measuring math 101 outcomes or as broad as developing new methods for summarizing scientific literature.

Another set of advances that has been developing almost all this century is measurement theory—measuring psychological qualities using psychometric methods. One aspect that has been emphasized at this meeting is enhancing mathematical and sci-

ence knowledge for everybody. That requires testing both the current state of that knowledge in people of various ages, and presumably then assessing any increase. These psychometric techniques demonstrate the complexity of measuring change.

Two other measurement techniques, cost/effectiveness and cost/benefits, are from economics. Assessing specific science policies and their outcomes as national investments depends on using these techniques.

The term *policy sciences* is frequently used but not well defined. Even so, the policy sciences have played an increasing role in developing and evaluating public policy.

Another area, the science of cognition, is a relatively new effort. However, it is an extremely successful one, ranging from very fine grained analyses of mathematical and scientific learning to large scale simulations of policies and their implications.

Some of these techniques can be used in addressing issues of resource allocation as well as in helping communicate to the public the usefulness and worth of their investment. These techniques have certainly been useful in the behavioral sciences in assessment.

As a chancellor of a public research university, I can attest to a considerable skepticism on the part of the public about what we do in research of all kinds. I also hear a lot of questions on undergraduate education: How well do we do it in research universities, and why does it cost so much? I hear a lot of remarks that question the public investment in graduate education and its outcomes, especially for a state university. A great many questions dwell on basic research and whether the public should invest -- particularly at the state level -- in basic research, instead of much more narrow, problem-oriented research.

I think our science policy makers are going to have to face up to these basic issues that are in the public mind. To interpret what some of our politicians have been telling us today, we must describe in a better way to our funding public what we do and what it is worth.

Questions of science policy and priorities

Some of the methodologies I've mentioned could be applied to questions of science policy and priorities. For example, it's clear that our country must look at the incentives and disincentives of becoming a scientist. We must also promote the excitement of science for the brightest of our young people.

We must also deal with falling test scores in science and mathematics. This is made even more complicated by the need for increasing diversity in the scientific work force. I can tell you how rigid we sometimes become on some of these issues in the public

schools:

I have a son who has a learning disorder, and he reverses numbers and letters and things. When he took high school algebra, you can imagine how that became an extremely important issue. So, I taught him how to estimate answers to problems in his head so that, when he finished his problem or proof, he could tell whether he was in the ballpark or not. He could at least know when he made a major mistake. I had a personal visit from his mathematics teacher, who absolutely insisted that I not do that. It interfered with how she thought mathematics should be taught. When he could sit in class without paper and pencil and give her an approximate answer to the problem on the board, she did not know how to cope with it. Clearly, if we approach learning so, we turn off our young people. We have already turned off half of the teachers who are able to teach science and mathematics, and we need a major effort to reverse that trend as well.

Another approach that I consider useful is by Richard Nelson, an economist at Columbia, and others. They asked applied research groups in industry the question, "What do you find most useful from the PhDs that we turn out?" This introduces the question, then, of educational product, which tends to be submerged in discussions of university science, and its costs. The investigators asked whether it valued most the methods and skills of graduates -- typically hardware and instrumentation skills -- or their understanding of theory and knowledge of facts. The respondents overwhelmingly said methods and skills were most important.

What are the implications of this in terms of science funding and science training? One potential implication is that we should more clearly and completely distinguish between two categories of funding for university research. One category supports the development of cutting-edge scientists -- our educational product. The other category funds basic research carried out in universities.

Of course, you must do basic research to train graduate students. That represents the absolute level of funding to maintain the educational product of scientists and engineers. An implication of the educational product category is that we should support the sciences relatively equally and across the board to produce a steady progression of scientists throughout the disciplines.

The first category of federal grant support would be for basic research that is carried out to educate doctoral level students. When supporting the educational product, we should be less concerned with what is being discovered as long as it is being discovered using cutting-edge methods and skills. We would also want to support up-to-date instrumentation and hardware so that the PhDs we turn out would be immediately

useful to industry. For the educational product, we should support pre-doctoral fellowships, post-doctoral fellowships, hardware and instrumentation, summer salaries, but not a lot more. We would have to do that much in every science to have a steady flow of useful PhDs who could be hired elsewhere.

This means some of what we now call research funding in science is really education. It is there for graduate education. Separating the two categories of funding allows us to separate our costs, perhaps in ways that would be convincing to others.

The second category brings in the strategic aspect of funding. In addition to well-funded efforts that would underlie doctoral education, what else does the country want to support? This represents the investment in basic research for its own sake, not simply for the education of graduate students. In the second category, one could increase support for a hot science, but not for other sciences.

Consider in this context the issues of a balanced basic research portfolio. The balanced research portfolio needs to be balanced specifically for the educational needs of the PhD students. There is less need for balance in basic research funding, over and above producing the educational product.

Some behavioral scientists have been looking at another issue -- the study of sequences and incentives when exploiting basic research findings. When people think about the usefulness of basic research, you will notice they always think backward in time. They take something that has been successfully exploited and is commonly known, and they reason backward to find its roots in basic research.

It seems to me that we could think about that a different way. We could study the cues that people use regarding basic research outcomes that lead to further investment. Why do some findings get exploited, but not others? What is the sequence of events that society and business go through that lead one from what is really a very narrow finding of unknown import to a fully exploited finding of great economic import? This is a people issue: People are making complex judgments with imperfect information and an imperfect judgmental apparatus. Decision-making under uncertainty is a well researched area of the behavioral sciences. We might consider ways to make that process more reliable so as not to leave a finding unexploited because we do not recognize its

import at the moment. We could also consider how to speed up the process from finding to exploitation by the public. This approach could lead us to think of how to play off some of the downside risk, as it were -- the over-investment in the SST, for example.

The source of investment is an issue as well. We need to know the conditions under which private investment in this exploitation process is substantially better for movement along the sequence than public investment. We have not asked those questions at all, but I think they are answerable to some level, certainly to a useful level. They represent provocative questions of applied research.

The unique contributions of the behavioral sciences regard people issues. There are people issues in the derivative health care system; there are people issues in the organization of science; there are people issues in the process of deciding priorities in science. I could not be exhaustive here, but let me mention just three possible contributions: (1) Changing organizations and cultures. Some think the United States is in an upheaval concerning science funding and the conduct of science. For example, future science funding may no longer be filtered as frequently through the military. Behavioral science could add to a discussion of how to make the shift. (2) The White House and others are in the process of making very complex decisions regarding science funding priorities with imperfect information. The research on decision-making mentioned earlier could be of great use here. (3) The same policy makers are trying to develop a process of assessing organizational strategies. These happen to be three well-researched areas in the social and behavioral sciences.

I suggest, then, that several important science areas -- determining priorities, funding and policy -- involve basic research questions within the scope of the social and behavioral sciences.

I have tried to describe very quickly for you (1) the consensus on research priorities in our fields; (2) some methodological tools that are useful in justifying and describing our scientific effort; and (3) some hints on how the research base of the social and behavioral sciences -- the people issues -- are valuable in assessing both science policy and science priorities. Thank you very much. (Presented 1/31/94)

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CALENDAR

Send calendar items in Campus Mail to *Mizzou Weekly Calendar*, 407 Reynolds Center, by noon Thursday the week before publication. Events are free and open to the public unless otherwise noted.

5 Thursday

CANCER CENTER AUXILIARY: Annual jewelry sale from 8 a.m.-5 p.m. today and 8 a.m.-3 p.m. tomorrow in the main lobby of Ellis Fischel Cancer Center. Call 882-5456.

HUMAN RESOURCE SERVICES SEMINAR: "Retirement Planning" will be offered from 9 a.m.-4 p.m. in 146 Heinkel. Call 882-4859.

BLACK CULTURE CENTER: "Malcolm X Celebration" is at noon at the center, 823 Virginia Ave.

SUPPORT GROUP: Better Breather's Club will meet from 1:30-2:30 p.m. in the Main Street conference room at University Hospitals and Clinics. Call 882-3324.

BIOCHEMISTRY SEMINAR: Dr. Maurice Godfrey of the University of Nebraska Medical Center will discuss "The Marfan Syndrome: Long People With Large Problems" at 3:40 p.m. in MA217 Medical Sciences Building.

PANEL DISCUSSION: "The Future of Libraries at the University of Missouri" will be at 3:40 p.m. in 112 Hulston Hall.

CANCER PANEL: "What You Need to Know About Surviving Cancer" featuring KMIZ TV's Teresa Snow as panel moderator will begin at 7 p.m. in the lobby of Ellis Fischel Cancer Center. Call 882-8131.

GUEST SPEAKER: Eddie Hedrick, infection control manager at University Hospital and Clinics will discuss "Media Coverage of AIDS" at 7 p.m. in the Tucker Forum of Gannett Hall.

6 Friday

VISUAL ART OPEN HOUSE: An open house for Christine Doerr's Art 1 class will be held from noon-1 p.m. in the Writing Lab, second floor Arts and Science.

PHYSIOLOGY SEMINAR: Min Li will present "Pleiotropic Effector Cell Defects in FcR Gamma Chain-Deficient Mice" at noon in MA414 Medical Sciences Bldg.

ENTOMOLOGY SEMINAR: Wei Liu will present "Substrate Specificity and Inhibitor Sensitivity of Cholinesterases in Homogenates of Western Flower Thrips" at 2:40 p.m. in 2-10 Agriculture Bldg.

PHI KAPPA PHI INITIATION: Haskell Monroe, professor of history, will speak at an initiation and reception for new members of Phi Kappa Phi at 7 p.m. in N201-202 Memorial Union.

LAWS OBSERVATORY: The observatory, located on the roof of the Physics Bldg., will be open on clear Friday nights from 8-10 p.m.

MSA/GPC FILM: *Young Frankenstein* will be shown at dusk on Lowry Mall.

7 Saturday

STOP DAY

MEET MIZZOU DAY: This special event, for potential students and their families, will take place on campus today.

SUPPORT GROUP: S.H.A.R.E. support group will meet at 7 p.m. in room 125, Ellis Fischel Cancer Center. Call 882-7373.

8 Sunday

A CELEBRATION OF WOMEN IN THE THEATRE: The Second Annual Awards Ceremony and Dance at 6:30 p.m. in 129 Fine Arts Building, cost \$3.

9 Monday

FINAL EXAMINATIONS BEGIN

PSYCHOLOGY LECTURE: Robert Logie of the University of Aberdeen will present "Aggregate Data, Strategies and Cognitive Neuropsychology: The Case of Verbal

Short-Term Memory" at 3:40 p.m. in 313 Psychology Bldg.

SOIL AND WATER RESOURCES

SEMINAR: Jia Yang will present "Soil Chemistry" at 3:40 p.m. in 133 Mumford Hall.

CHILDBIRTH CLASSES: Beginning childbirth classes, sponsored by University Hospital and Clinics will be held from 7-9 p.m. on Mondays through June 27 in the 7th floor classroom at Ellis Fischel Cancer Center. Cost is \$45. Call 882-6973.

10 Tuesday

HUMAN RESOURCE SERVICES

SEMINAR: "Personnel Action Forms (PAFs)" from 9 a.m.-noon in 146 Heinkel. Call 882-4859.

MIZZOU TELECOM COURSE: "Using Telephone Features Effectively" will be presented at 1:30 p.m. at the Telecommunications Building. Call 882-2177 to register.

PHYSIOLOGY LECTURE: Peter Cala of the University of California-Davis will speak on "Cell Volume Regulation: Phosphorylation Dependent Control of Alkali Metal/H Exchange" at 3:40 p.m. in M558 Medical Science Building.

WELLNESS CLASS: L.E.A.N. for Life will be held at 5:30 p.m. at the University Physicians at Crossroads. Call 882-2251 to register.

SUPPORT GROUP: Nicotine Anonymous will meet at 7:30 p.m. in 125 Ellis Fischel Cancer Center. Call 882-7353.

11 Wednesday

HUMAN RESOURCE SERVICES

SEMINAR: "Managing the Student Worker" will be offered from 8:30 a.m.-noon in 146 Heinkel. Call 882-4859.

PHYSIOLOGY SEMINAR: Daniel Villarreal will speak on "Natriuretic Peptides" at 2:40 p.m. in M437 Medical Sciences Bldg.

12 Thursday

HUMAN RESOURCE SERVICES

SEMINAR: "How to Motivate Yourself and Others" will be offered from 9 a.m.-4 p.m. in 146 Heinkel. Call 882-4859.

STAFF ADVISORY COUNCIL: Group will meet at 1:15 p.m. in N214-215 Memorial Union.

MIZZOU TELECOM COURSE: "An Introduction to Mizzou Telecom" will be presented at 1:30 p.m. at the Telecommunications Building. Call 882-2177 to register.

PSYCHOLOGY LECTURE: Professor Larry Squire of the University of California-San Diego, president of the Society for Neuroscience, will present "Memory Systems" at 3:40 p.m. in 313 Psychology Bldg.

WOMEN'S CENTER: "Everything You Want to Know about Long-Term Relationships" will be the topic of the lesbian roundtable at 7 p.m. in 229 Brady Commons.

MIZZOU WEEKLY

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EXHIBITS

BRADY COMMONS GALLERY: Chun Wang will have watercolors on display from May 2-11. The gallery, on the second floor of Brady Commons, is open from 10 a.m.-5 p.m. Monday through Friday.

MEMORIAL UNION: An exhibit of photographs and memorabilia from the Missouri School of Religion during its years at Lowry Hall is now being shown in the first-floor corridor of the north wing of the Memorial Union. The exhibit will remain on display through June 6.

"Erin Go Braugh!", an exhibit of photos and memorabilia relating to the engineers' St. Patrick's celebration, 1903-55, is on display in the south wing exhibit case through May. The exhibit is presented by the University of Missouri Archives.

MUSEUM OF ART AND ARCHAEOLOGY: "Selections from the Permanent Collection of Ancient Art" is on display through June. Also on display is "Isms and Others in the 20th Century." The museum, in Pickard Hall, is open from 9 a.m.-5 p.m. Tuesday through Friday and noon-5 p.m. Saturday and Sunday.

INTRODUCTION TO VISUAL ARTS: These exhibits will be on display through the semester at the Writing Lab 231 Arts and Science.

STATE HISTORICAL SOCIETY: "Pacific Railroad Surveys" is on display in the gallery through mid-May. "The Contemporary Artists Collection" is on display in the north-south corridor, and "Decades: 1894 to 1964, Editorial Cartoons" is on display in the east-west corridor, both through autumn. The gallery, in the east end of Ellis Library, is open from 8:30 a.m.-4 p.m. Monday through Friday. The corridors are open from 8 a.m.-4:30 p.m. Monday through Friday and 9 a.m.-4:30 p.m. Saturday.

UNIVERSITY HOSPITAL AND CLINICS: "Art For Life" paintings and drawings by Sharyn Hyatt and recent works from faculty and students in the University of Missouri ceramics program. This exhibit will run through June 30 and is at the University Hospital and Clinics and Ellis Fischel Cancer Center. For more information call 882-1169.

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