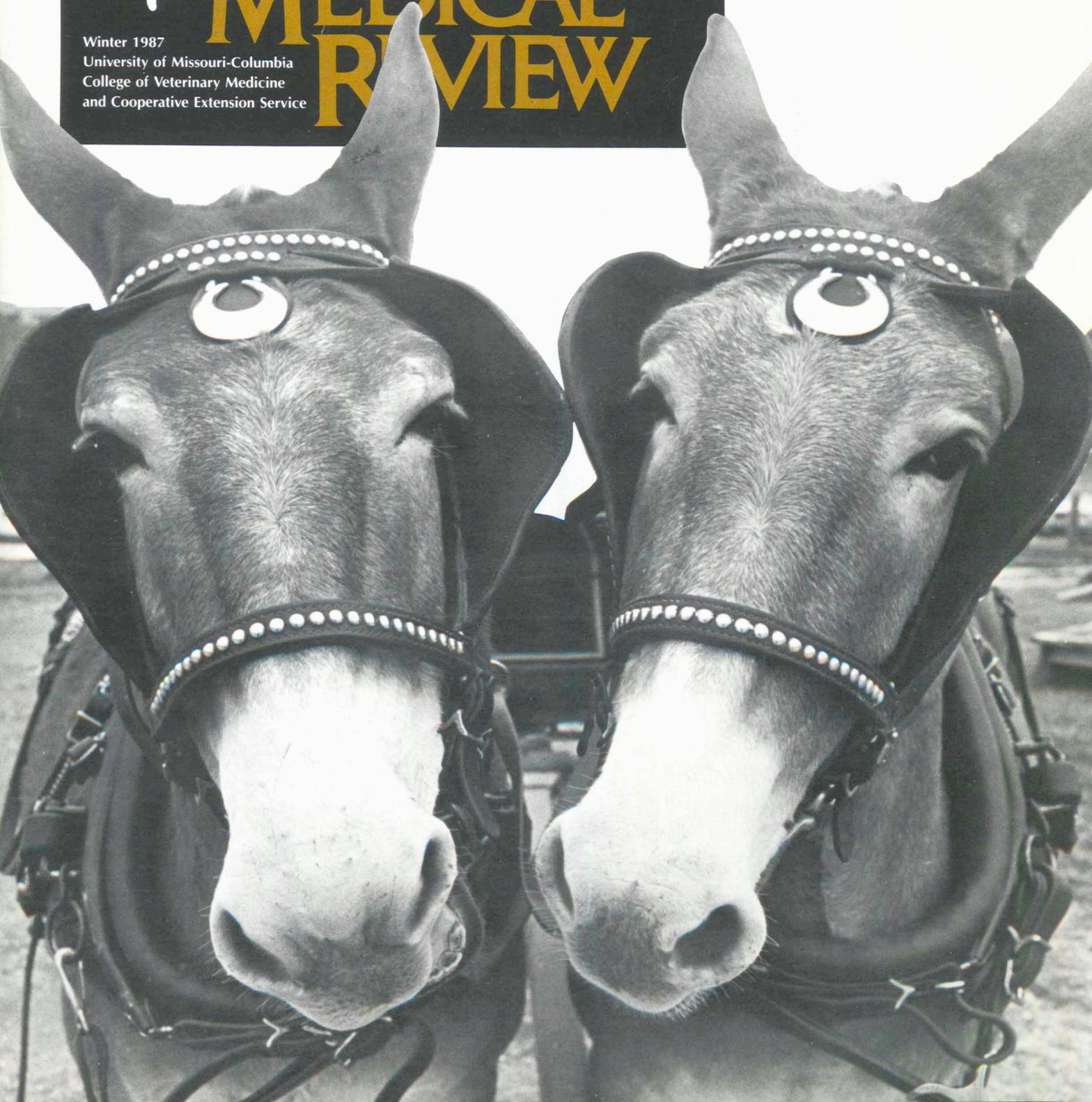




VETERINARY MEDICAL REVIEW

Winter 1987
University of Missouri-Columbia
College of Veterinary Medicine
and Cooperative Extension Service

HILLDA AND LOUISE:
MULISH ON MIZZOU



CONTENTS

- 3 · Hilda and Louise:
Mulish on Mizzou
- 6 Report details space
needs
- 10 Research
- 13 Against all odds:
Battling heptachlor
contamination in
Southwest Missouri
- 15 Around the College
 - 15 Biomedical
Sciences
 - 16 Diagnostic
Laboratory
 - 17 Medicine and
Surgery
 - 19 Microbiology
 - 19 Pathology
- 20 People
- 24 Mizzou education
tradition



DEAN'S COLUMN

Greetings from students, faculty and staff of your College of Veterinary Medicine.

Congratulations to Dr. Joseph Wagner, chairman of the department of veterinary pathology, who received the Charles River Prize for outstanding contributions to laboratory animal medicine at the American Veterinary Medical Association meeting in Atlanta. He also was installed as president of the American College of Laboratory Animal Medicine.

Other Missourians honored at the AVMA meeting were Buck Lindsey, DVM '57, who was chosen Industrial Veterinarian of the Year, and Norman Manning, DVM '86, who was designated the first Hill's Clinical Nutrition Scholar.

The Missouri reception at the meeting was a gala event, thanks to the support of Haver-Lockhart Co. It was arranged by Jerry Johnson, DVM '56, and John Mozier, DVM '59.

Your faculty made a major program contribution with papers presented by Drs. William Braun, Gheorghe Constantinescu, Eleanor Green, Brent Jones, Robert McClure, Merl Raisbeck, James Thorne, William Wolff and Robert Youngquist.

Thanks for donations

Many thanks to the hundreds of alumni and friends who responded with a new record of generosity to the spring phonathon. Your gifts and pledges, some specifically directed but many unrestricted, will support major equipment purchases, spruce-up and clean-up efforts, student projects and faculty development programs.

New endowments

Through the extreme generosity of Dr. William Wolff and his wife, Madge, a new endowment—the Food Animal Research Fund in Veterinary Medicine—has been established. The interest on the endowment will provide research or investigative funds to support graduate students or residents in food animal medicine.

Through the generosity of Dr. Kenneth and Margaret Niemeyer, another new endowment—the Niemeyer Lecture Fund in Veterinary Medicine—has been established. The interest on this endowment will be used to defray the expenses of individuals brought to the college to deliver lectures to veterinary students, faculty and other interested individuals.

New development director

The Development Office has hired Michael C. Tarry of Lee's Summit, Mo., as director of development to assist in fund raising from alumni, friends and corporations. He will devote half of his efforts to the School of Journalism and half to the college.

Governor's veto

Gov. John Ashcroft's veto and withholding of three percent of the University's budget has dashed some of the college's funding hopes. Much of the previous progress toward reinstatement of full accreditation has been negated, but we'll work very hard to overcome these setbacks.

Seasons greetings,

Robert F. Kahrs
ROBERT F. KAHRs, Dean

ON THE COVER: Hilda and Louise nuzzle noses as they prepare for yet another public appearance. Ambassadors of the College of Veterinary Medicine, the mules are quite a hit with youngsters and mule skinner alike. For the story about our cover girls, see Hilda and Louise: Mulish on Mizzou, Page 3. Photo by Patrick Nichols.



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HILLDA AND LOUISE: MULISH ON MIZZOU



DUANE DAILEY

IN JULY they were at the Centralia Fair. In August they visited both the Ozark Empire Fair in Springfield and Missouri State Fair in Sedalia. In September they paraded in Kennett, Kirkwood and Chesterfield. And in October they helped restage the Civil War in Boonville.

They are Hilda and Louise, a pair of 8-year-old sorrel mules that follow in a long and distinguished tradition of Missouri mules. They are the official mascots of the College of Veterinary Medicine and, because of their many public appearances, they are quickly becoming one of the most recognizable symbols of the University.

"People know that they are with the College of Veterinary Medicine," says Cathy Wagner, VMII, of Columbia, president of the college's Mule Club. "Oftentimes they will come up to us and say, 'Oh yeah, I've heard of you,' and they know their names."

Hilda and Louise (the one with the bigger white spot on her forehead) are blessed with such even dispositions that even cars, screaming children and marching bands rarely faze them. "They're just like overgrown kittens," says Dean Robert F. Kahrs. Refuting the reputation of the stubborn mule, the pair give hundreds of people rides each year without complaint.

And there are many people eager for a ride behind a pair of Missouri mules. Children are usually the most anxious, but once adults experience their charms, they are often reluctant to end the ride, Wagner says.

"I remember one lady running after us with three kids because she wanted a ride," Kahrs says. "We had just finished exercising the mules and we had been giving rides to kids

Gov. John Ashcroft and Dean Robert F. Kahrs guide the mule team around the 1986 Missouri State Fair in Sedalia.

'If we show up in the Bootheel, we are the University of Missouri to those people,' says Dean Robert F. Kahrs.

in a field for about four hours. But she wanted a ride and so she asked if it would be OK to ride back with us to the college."

The heritage of mules in Missouri is a long one. Even though the University has not had a mule team for more than 30 years, there was a time when mules were a common sight in Missouri, when the state was called the mule capitol of the world and when every farm had a team in its stable. Up until the 1940s, Missouri exported thousands of mules each year and, during the peak of the state's production, 40 percent of the family farm income came from selling the animals.

Today the mule—which is the sterile offspring of a male donkey (jack) and female horse (mare)—is rarely seen outside of rodeos, weight pulls and show rigs. Those who remember the glory years seek out Hilda and Louise.

"The old Missouri farmer who farmed with mules comes up and looks at the mules, looks at the harnesses, looks at the reins," Kahrs says. "I say, 'I bet you're an old mule skinner.'"

"Sometimes I'll let them drive. They climb up in the wagon and take the reigns. The mules understand. They know there is someone there who knows about mules. And those old mule skinner drive around with a big grin on their faces and wave to people. They have the time of their lives."

Hilda and Louise have a busy schedule. On many weekends, they are wanted in two places at once. The only restriction Kahrs places on their outings is that it must be a public function—no weddings or private parties—and the University and the athletic department have top priority.

"If we show up in the Bootheel, we are the University of Missouri to those people," Kahrs says.

Ever since the college—with financial assistance from Hill's Pet



PATRICK NICHOLS

Food—purchased the mules four years ago for \$5,000, students, faculty, alumni and admirers have donated everything the pair requires—from food and housing to a wagon and a new harness. A \$4 a day boarding fee for the mules is paid to the college out of donations to a mule fund.

Students in the Mule Club take care of the animals and volunteer to accompany them on tours across the state. When students are away from the college, they either camp out in an empty stall next to Hilda and Louise or sleep in the mules' trailer. Students have missed only two trips with the mules, and some, like Wagner, have been in the club for as long as three years. She originally joined the club because she thought the mules would serve as a replacement for her horses.

"I decided it would be a lot of fun to work with the mules," explains Wagner, who says there are about 15

active members in the club. "And I always wanted to learn how to drive a team."

The dean originally conceived of the pair as marketing strategy: an upbeat way to place the college in the public's eye. Not everyone was sure it would work. "When I first told the college's executive committee, I think half of them thought I was crazy," Kahrs says. But the response has even surprised Kahrs.

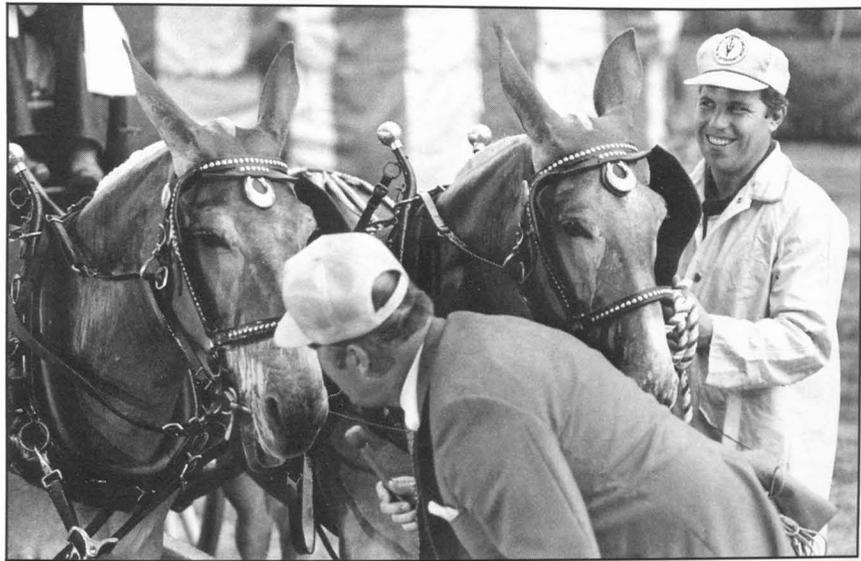
"In June, July and August we go to at least one event a week," he says. "Somebody sees them someplace and they say they would like to bring them to this fair, that parade."

"I try to go with them as much as I can, but sometimes I can't because of administrative priorities," Kahrs says. "Ten years down the road, when I'm an old, retired dean, all I want to do is take them to parades and tell people how great the University of Missouri is."



PATRICK NICHOLS

Above left, Hilda and Louise parade through downtown Columbia during one of their many public outings. Above, veterinary student Mindy Wilkerson donates her time to keep the mules well groomed. At right, TV weatherman Willard Scott of the Today show interviews Louise at the Missouri State Fair. Mule handler is Kelly Lager, a third-year veterinary medicine student.



DUANE DAILEY



REPORT DETAILS SPACE NEEDS

BY ROBERT KOHLMAN



A recent report ranks College of Veterinary Medicine facilities last among seven institutions. Illustrating the space crunch, photographer Patick Nichols visually distorts the veterinary medicine building by using a semi-fisheye lens.

THE College of Veterinary Medicine requires major expansion and renovation of its physical plant, a new facilities report says.

The report, which was completed by an independent firm for the University in August, compared the college with six peer institutions. The report found that "in quality and functional efficiency of facilities, Missouri is clearly last."

Without improvements, the college may lose its accreditation from the American Veterinary Medical Association, says Dean Robert F. Kahrs. When the AVMA Council of Education placed the college on partial accreditation in 1984, it said the college must improve its physical facilities and equipment, finances and faculty by spring of 1989.

Poor facilities also may prohibit the college from staying competitive with peer institutions, adequately meet the needs of its students, or fulfill long-range goals of strengthening research activities and postdoctoral training, the report says.

"I think it (the report) is an honest assessment of the condition of the physical facilities for the college," says interim Chancellor Duane Stucky. "But the report deals with facilities only. We still do a good job of teaching veterinary medicine students. I don't think we are providing a substandard education to our students."

The AVMA accreditation report found that the college was adequate in continuing and postgraduate education, organization, clinical resources, library and learning resources, enrollment, admissions and curriculum.

The 1988 fiscal year appropriations request from the University asks the state legislature for \$210,000 in planning money for a veterinary medicine addition. The University, which is asking the legislature for almost \$140 million for new construction and major renovation projects at the four University of Missouri campuses, has ranked the college's request as sixth in importance.

The request puts a \$15.75 million price tag on the new addition. This also will allow for new construction and modernization of older facilities, some of which are more than 40 years old.

Although the college's past funding record from the state is not encouraging—last year's \$200,000 planning request was passed by the

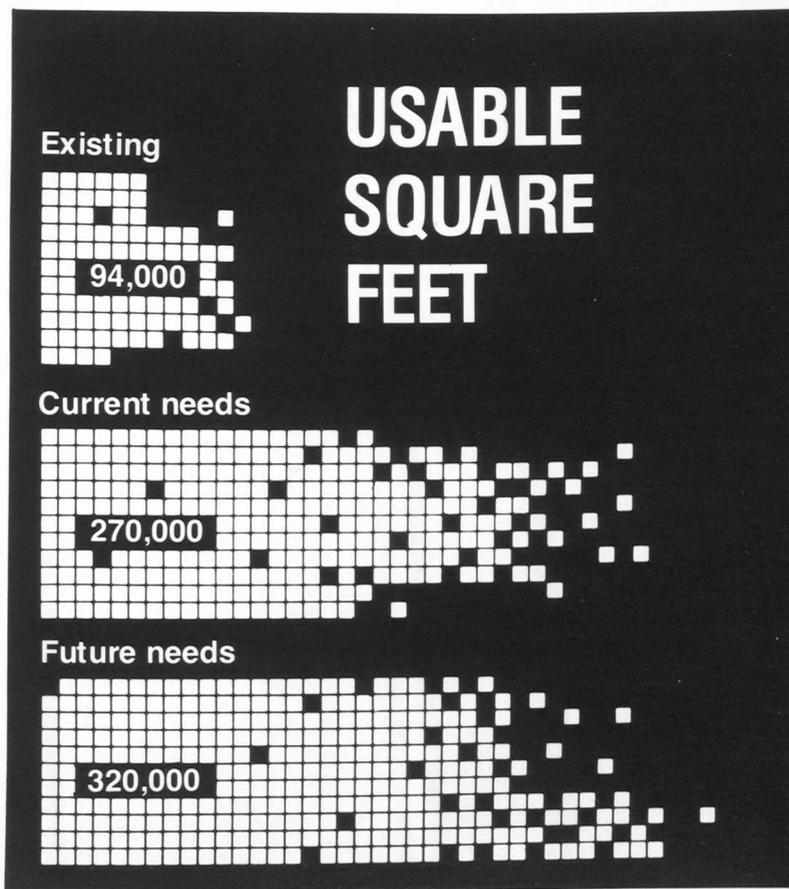
legislature, but vetoed by Gov. John Ashcroft—Stucky is confident the college will receive funding in the near future.

"There is a renewed optimism in the University that we will be far more successful in the next decade in convincing the state how important a resource higher education is in general, and the University of Missouri is in particular," Stucky says. "While it's a long-term activity to convince the state of that, ultimately it can be done, because it's the truth."

"Ultimately we expect we will get the money for the college," he says. "We will keep it on our priority list until the state gives us the money. And we wouldn't put it on the list if we didn't think it could be done."

Dean Kahrs agrees. "It is going to be a miracle of no small proportions, but I think the University and the state of Missouri are up to it," he said.

If the legislature approves the measure, the college would receive the planning money in July 1988, Kahrs says. That will not allow enough time for construction of an



Oklahoma State

Illinois

Kansas State

Minnesota

Tufts

Iowa State

Missouri



addition before the AVMA accreditation review, but Kahrs thinks full accreditation would most likely be restored if the AVMA saw the state's serious commitment to adequately fund the college.

"The committee won't expect us necessarily to have bricks up, but it will be content if the money is there," he says.

The facilities report, completed by Thomas R. Mason of Mira Inc. in Minneapolis, compared the college with veterinary colleges at Oklahoma State, Illinois, Kansas State, Minnesota, Tufts and Iowa State

SPACE PER STUDENT

In square feet

universities. It found that Mizzou ranked seventh in average space per student and in core building space—which does not include off-campus facilities, such as the Equine Center.

Among the report's other findings:

- Only 94,000 square feet of the college's current 198,000 usable square feet is adequate for its present needs. Almost 67,000 square feet must be replaced: the Veterinary Science Building, the buildings at the Veterinary Research North Farm, the trailer structures used by the diagnostic laboratory, the equine

In a comparison of seven institutions, Missouri ranks at the bottom in space per student in square feet: 690, Oklahoma State; 684, Illinois; 646, Kansas State; 613, Minnesota; 513, Tufts; 466, Iowa State; and 387, Missouri.

clinic at Middlebush Farm and the theriogenology outbuildings east of the college.

- Peer comparisons indicate that the college requires 270,000 square feet of space to house its current faculty, staff, and professional and graduate student enrollments.

- Planned future expansion of the college's graduate and research programs will require an additional 50,000 square feet of space above the currently needed 270,000 square feet.

In accordance with the AVMA's evaluation, the facilities report ranks specific improvements for the college. A top priority is modern clinical teaching facilities for food animal, equine and small-animal patients. The report also recommends remodeling and expansion or replacement of the entire Veterinary

Teaching Hospital. The current hospital, housed in 44,000 square feet of scattered space, needs to be consolidated and nearly tripled in size.

The college also needs to replace the Veterinary Science Building, which houses the teaching and research activities in physiology, pharmacology, pathology and toxicology. The building, a World War II U.S. Army hangar, was purchased by the University as a temporary structure in 1947.

Third on the list is the development of research facilities for large and small animals. The development is needed to conform to University and federal guidelines, to support University emphasis on research and postdoctoral training, and to achieve approval by the American Association for Accreditation of Laboratory Animal Care. It also is needed for the college's participation in programs the University has targeted for eminence, such as molecular biology, Food for the 21st Century and biologically related sciences.

To provide a permanent home for the Research Animal Investigative Diagnostic Laboratory, a new site for infectious livestock disease research facilities is recommended. The current facilities at the North Farm were deplored by the AVMA in its evaluation.

Other priority items are:

- The diagnostic laboratory needs to be expanded to eliminate its unsafe trailer annexes. "This expansion responds to expectations for excellence in diagnostic services and demand for research in diagnostic technology caused by concerns about infectious disease of livestock, residues in food, environmental contamination and drug testing for parimutuel racing," the report says.

- The microbiology facilities in Connaway Hall need either a major overhaul or relocation because of mandated utility systems for biohazard containment.

- The veterinary library, which currently contains 7,000 square feet of space, needs to be almost doubled in size.

- The college needs a 500-seat lecture hall.

A preliminary report prepared by Kahrs suggests the building of a three-story facility on the hill east of the current veterinary clinic. It would contain about 26,000 square feet of usable space on each floor and would house the large-animal and food-animal hospital, the small-animal clinic and more than 40 faculty offices.

The problems presently facing the college are historical ones, Kahrs says. The college has been underfunded since its founding in 1946.

"The school was started on \$250,000, when in fact it needed \$3 million to \$4 million," he says. "Funding has been incremental ever since. Five percent of nothing is still nothing."

In fact, the college was on partial accreditation because of its poor finances and facilities from its beginning until 1976, when the AVMA evaluation team granted it full accreditation by a split vote. Since that time, the AVMA has changed its policy of allowing colleges to remain on partial accreditation for extended periods of time.

"The resources were not enough when the college was started," Stucky says. "I doubt there has ever been a time in the history of the college when the University has had enough funding for the college."

He said the facilities the college started with—Connaway Hall, and later the Veterinary Science Building—were not adequate at the time. The college has been playing catch up ever since.

Technological advances make it impossible for the college to operate on the small budgets of the past, Kahrs says.

"There are a series of factors that make this urgent," he says. "There has been advancing technology, the emergence of specialties, competition from newer schools and the University's shifting emphasis to research."

"When you look at a school to say how good it is, you can only compare it with other veterinary schools. The other states that border Missouri have put millions of dollars into their veterinary facilities. Missouri has not."

By Timm England, VMIII. Submitted to Dr. Manuel Torres-Anjel.

The medicolegal aspects of veterinary medicine: the need for education

The medical profession has found itself in a severe medical-legal conflict, so much so that some physicians refuse to treat lawyers and their families. Norton points out that the conflict "... is the result of lack of communication; failure of understanding of basic professional objectives, methods and philosophy of the coprofessional. . . ."¹

Before the veterinary profession finds itself in a similar position, positive action needs to be taken. Educators at the College of Veterinary Medicine need to realize the necessity for education in the medicolegal aspects of veterinary medicine. Through a more complete understanding of the legal system, interactions between the professions of law and veterinary medicine can occur. Through cooperation and integration of the two professions, everyone will benefit.

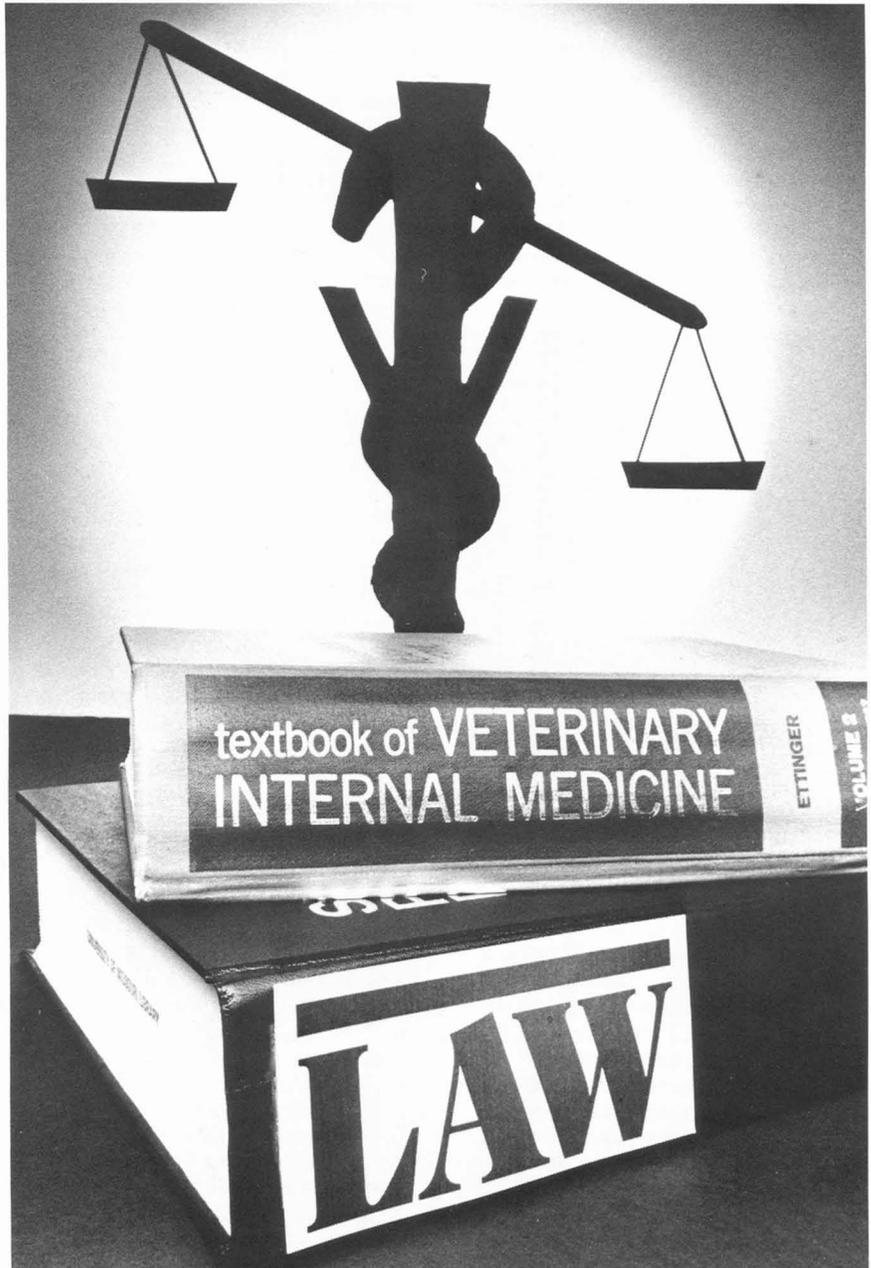
The most effective method for improving this situation is to increase the exposure of each profession to the rules, methods and knowledge of the other.² As science becomes more complex and law changes little, there will be a need for people prepared to deal with medicolegal situations. As Kittrie says in *Medicine Law and Public Policy*, "For adequate instruction it is necessary to inform the student of the rationales and methodology of the other profession, including as well a thorough grounding in its ethics and goals. In addition there should be an explanation of the conceptual and methodological differences between the professions."³

Why Medicolegal Aspects of Veterinary Medicine?

The trend has been to name a course in veterinary law *Veterinary Jurisprudence*, borrowed from *Medical Jurisprudence*.

Over many years of the English and American legal education, jurisprudence has narrowed further to pertain to only the philosophy of law.⁴

The scope of the course needed by the veterinary profession goes



beyond the philosophy of law, as it is understood today. Veterinarians need a course that includes terminology and function as well as information about their position

within the legal system.

The name *Medicolegal Aspects of Veterinary Medicine* gives the course more latitude to expand beyond philosophy and include

examples of actual legal confrontations that veterinarians will face.
The need for Medicolegal Aspects of Veterinary Medicine

Almost everything a veterinarian does in the practice of veterinary medicine is governed directly or indirectly by the legal system. Law defines contracts, types of consent, uses of drugs, licensure, malpractice and negligence. The list continues. It is interesting to note that the majority of veterinary students at the college are unaware of the importance, or even the extent, of legal ramifications involved in the day-to-day practice of veterinary medicine. If veterinarians hope to survive in these competitive times, they need to incorporate legal education into their medical curriculum. Ignorance and misinformation must be replaced by understanding and awareness.²

At the University, the colleges of Veterinary Medicine, Medicine and Law are all on the same campus. Each has a wonderful opportunity to introduce a course that would remove the conflict among the professions and correct any misunderstanding before it becomes firmly fixed.⁵

The medical schools have justification for such a course. George Annas said, "The problem now faced by the medical law class in medical schools is not the justification for the need of this class in the curriculum, but rather to make sure the class is taught well."⁶ All of the articles referenced reached the same conclusion: There is a known need for such a course. As early as 1952 the Committee on Medicolegal Problems of the American Medical Association stated its belief: "In the practice of medicine no physician can avoid contact with the law and that no medical student should be permitted to receive his degree without instruction in his legal duties to his patients, community and government."² There is no reason to assume the needs of the veterinarian are any different because they, too, are involved with the legal system in many instances.

A number of medical school administrators indicated that the absence of the course was because of lack of student interest. At the college, the students were surveyed as to their interest in a course of Veterinary Jurisprudence/Ethics. Seventy-six percent of those students

who responded indicated a sincere desire for such a course.⁸ Why then is there no action being taken to develop this course?

One possible explanation was presented by Hirsch: "Part of the explanation appears to lie in the fact that the teaching of clinical medicine has come almost exclusively under the control of the full-time professor. Generally, this professor is not faced with the problems that develop with the ordinary interfacing and confrontation of law and medicine in a typical clinical practice. Furthermore, when he does become involved in a medicolegal situation, he turns the matter over to the administration."⁷

There is a need for this course now. The legal problems in the medical profession certainly justify it. Veterinary medicine needs to react to the situation in order to bypass the problems now faced by the medical profession.

Purpose of the course

The course needs to apply the basics of law, which provide a framework from which to expand.

There is a problem to overcome when interfacing law and veterinary medicine that begins the first day of education for both professions: There is a dramatic difference in the method of decision making. The law schools use the adversary system, in which the students are taught not to accept something before testing it. Veterinary medical students, on the other hand, are in school such a short period of time compared to the material presented that the adversary system is discarded for the sake of time.² This is unfortunate, since the system would benefit the veterinary student because it gives rise to new technology.

Modern veterinary medicine is also the product of scientific method. This method is mainly inductive and experimental, since the principles of veterinary medicine can be tested in the laboratory. The subject matter of law, however, restricts the application of scientific method. In fact, law making involves value judgements. It is man against man within the legal system, and it is man against nature in veterinary medicine.

Since law is made by man, there is both bad law and good law. The students must be presented with these types of thoughts. They must learn to understand how the legal system works and how the lawyer

thinks. Powers said it best: "Each profession has a highly technical language that is largely unknown to the other. In the same class is the increasing specialization within the professions. Each profession has been so compartmentalized that it suffers from a spot of professional myopia."² This professional myopia has obscured the knowledge revealed by other professions.

Course content

The course of Medicolegal Aspects of Veterinary Medicine should be broad in scope. The basics of the legal system should be presented with emphasis on the method of decision making within the legal system. This method of thinking can then be used as a guide throughout the course. As Norton said, "A program should be developed discussing the historical development of law and its sociological implications; basic principles of torts, and other related aspects of the legal fields involved, terminology, methods of legal research and an indication of the mechanics of a legal procedure."¹

The basic class of black letter in which the student memorizes statutes should be avoided. It is important to stress that the veterinarian's involvement in the legal system goes beyond malpractice and negligence. According to Schwartz, "A physician's ability to work with a lawyer will be more enhanced by his recognition of the lawyer's method of analysis than it will by his memory of a paragraph of the state's medical reporting statutes."⁹

There is a definite shortage of texts in this area of medicolegal aspects. The course will require a joint leadership by medical and legal educators with the support and active use of resource specialists.¹ The course should develop an interprofessional relationship, based on mutuality of interest in the subject matter presented.⁹

It is important to stress the need to teach the method of decision making by the lawyers. Any attempt to teach law to veterinary medical students by the same methods they are taught to law students will fail to help veterinary medical students understand how lawyers reason and how they resolve problems.⁷ As Schwartz pointed out, "It is academically unsound to teach law to medical students in a way which nothing else is taught to medical

students; such actions only communicate to the students the medical profession's bias that the subject of law is mysterious, unimportant and not related to the professional role of the physician."⁹

The amount of material introduced should correspond with the time allotted for such a course. If the course is taught at all, it should be taught well. In veterinary schools the student spends considerable time learning about unusual diseases, most of which they will rarely or never see, when in fact the legal problems that arise may be of daily concern. Therefore, it seems reasonable to assume that innovative professional educators could arrange to have sufficient time allotted for presenting a course in the medicolegal aspects of veterinary medicine. It will take the efforts of both student and professionals to introduce into the education motivation, objectives and research techniques.¹

The course should be innovative and, above all, interesting and enjoyable. Kittrie noted, "The general failures of medical schools to innovate and adapt the presentation of legal medicine to the needs and wants of their students seems to reflect an unawareness and conviction on the part of a school's administration and faculty that the subject does not warrant concern or care."³

It is no different than trying to teach a veterinary student how to make a diagnosis. Without the proper knowledge of disease processes and etiologies, the student is left uncertain. It is important that the veterinary student has knowledge of the law and the legal process. Without this knowledge the veterinarian will not be able to know when to seek an attorney's advice on a legal problem. Lizzer concluded, "One should learn about another discipline before attempting to solve problems that overlap disciplinary boundaries."¹⁰

Suggested course content for the Medicolegal Aspects

Introduction to the legal process

Origins of the law

Federal law

State law—including county and municipal law.

Divisions of law (significance in veterinary medicine)

Contracts—clients, partnerships

Torts—malpractice and negligence

Agency

Licensure

Criminal law

Evidence—expert witness

Law as it relates to real estate, income tax and loans

Moral, ethical and legal problems within veterinary medicine

Course scheduling

Agreement among educators as to when such a course should be offered during the professional curriculum varies from the last year in clinics to a course that is taught throughout the professional years.^{2,5,9,10} At the college, it seems most logical to implement the course during the second year. Schwartz said, "It may be most appropriate to start a formal program during the first part of a medical (veterinary) students clinical training."⁹

The fact is that if it is presented too early in the professional education, the course will appear to be purely academic because beginning students are often unaware of any legal problems the practitioner may encounter and become disinterested. On the other hand, if offered too late in the professional education the students may have already formed opinions on legal aspects of the profession. These preformed biases will make the student unreceptive to new ideas.

If the course is taken during or before the last didactic material is presented, it will prepare the student to notice legal situations which may arise. As soon as the student begins to interact with the public, legal situations will become apparent. The student already enlightened to such situations will be better able to respond, and application of this knowledge will reinforce the class time. Experience is one of the best instructors. But until these situations occur, students will forget their legal education. And once again, we may find ourselves in the medical-legal conflict.

It is important to emphasize one fact. Once this course is completed the learning in medicolegal aspects of veterinary medicine has only begun. Ongoing seminars on an elective basis for those students with an interest beyond the scope of the course should be available.¹ Seminars could be given in such areas as how to form or dissolve partnerships, how to prepare to be an expert

witness and how to keep legal records.

Conclusion

The need for a course in medicolegal aspects of veterinary medicine is evident. Through learning each profession's terminology, methods and procedures, a cooperative interaction can occur. The course is not intended to make lawyers out of veterinary students, but rather to present a basic understanding and respect for the intertwining of law and veterinary medicine. Students will learn what each profession has to offer the other. Once the course is completed, there is also a need for continued education. As Powers wrote, "No profession has a monopoly on intellect and skill. Each is very deserving and very much needed by society. Properly presented, interprofessional education should inoculate enough humility along with understanding so as to bring this conflict to a conclusion."² Through proper education and cooperation, the professions can unite. This unity will help both professions.

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AGAINST ALL ODDS: BATTLING HEPTACHLOR CONTAMINATION IN SOUTHWEST MISSOURI

THE first time Donnie Wright of Washburn, Mo., knew his 46 dairy cows had heptachlor contamination was the day the state Department of Health shut him down.

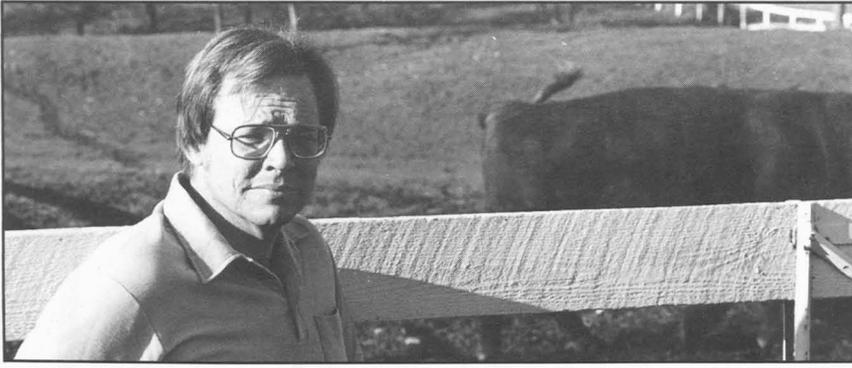
That was the day he found out that his cows had received dangerous levels of contamination from grain purchased from an alcohol plant in Van Buren, Ark. Since last winter Wright has been forced to

pour his only income down the drain—more than \$250 worth of milk a day.

“It’s our only source of income,” he says. “Before this, we were making it real good. But we’ve got a loan on the farm and the cows, and if we don’t get some help soon, we’ve lost it.”

He is not alone. At least eight other dairy farmers, mostly in southwest Missouri, and numerous





Heptachlor contamination can't be ignored because the problem won't go away, says Dr. Merl Raisbeck, assistant professor in the diagnostic lab.

cattle and swine producers, also received the same visit.

The special problem with heptachlor contamination is that there is no known way to artificially remove the contamination from an animal's fat cells. The only way is to let it dissipate naturally—which will take more than two years in Wright's case. And he cannot afford to wait that long.

The number of contaminated livestock is not startling. Only about 700 cows, as well as more than 1,300 pigs, have heptachlor contamination.

What is cause for concern, however, is that the heptachlor contamination may be part of a larger problem. There are currently six different contaminants in the state. Contamination is an almost yearly problem in the state and around the country.

Dr. Merl Raisbeck, assistant professor in the college's diagnostic laboratory, spent much of last year studying the heptachlor contamination problem. What he found were scared farmers, no research money and a number of problems neither he nor any other researcher knew how to solve.

He also discovered contamination can't be ignored because the problem will not go away.

"Contamination is a constant in agriculture, and maybe in agronomy also," he says. "It's something that is going to have to be watched from now on."

Raisbeck says there have been numerous contamination scares in recent years, and each time people predicted it could not happen again. There was a heptachlor contamination problem in Hawaii in 1981, for example. Heptachlor was banned, but it did not keep the problem from recurring.

There was a chlorine pesticide problem in chickens in 1984. The same problem cropped up again recently in Arkansas, and farmers

were forced to destroy hundreds of chickens.

Raisbeck originally became involved with heptachlor through contamination testing at the diagnostic lab. He found levels ranging from a few tenths to 30 or 40 parts per million. The legal limit for heptachlor in an animal is .1 part per million.

Raisbeck has been working with the health department to identify contaminated animals and help farmers survive financially until aid is available.

"We are sorting out the pieces and putting people's lives back together with the minimum amount of damage," he says. "It's degenerated to hand-holding now. They need to know that someone else somewhere still gives a damn."

The major problem standing in the way of a permanent solution is money. Although such contamination has a serious impact on farmers, there is no study of the problem currently under way anywhere in the country, Raisbeck says.

A \$100,000 proposal submitted to the federal Department of Health last year for a problem study was turned down, he says. Instead, Raisbeck worked on three studies he funded partially by money from the college, from donations from such organizations as the Missouri Farmers Association and the Farmland Cooperative, and with money from his own pocket. It was not nearly enough to do the research properly.

"Our whole idea was that we wanted to get something done early enough so we could help these people," he says. "Now our emphasis is changing from taking care of this mess to, 'Let's try to do something for the next time.'"

None of the studies appeared to be successful. The first two—which used charcoal and mineral oil to flush the contaminants from the

animals—were stopgap measures designed to provide immediate relief to a pressing problem.

The third study, which used a BHA compound to remove the heptachlor from the fat cells and metabolize it in the liver, had the most chance for success. There was a small, but significant, increase in milk production and body weight of the animals, but there appeared to be no difference in the rate of heptachlor excretion.

"The BHA doses were small, and we might not have used enough," Raisbeck says. "We scaled up from what works with rats, but we don't know if a lab rodent's and a cow's liver metabolize the same. It certainly points out the need to go back and look at metabolism in all animals."

The study could provide valuable information for future research, however.

"What we are looking for is something that has a small effect that at least will give you a track to look for," Raisbeck says. "For instance, BHA could be a guidepost for other compounds."

"We know things we don't want to try next time. I don't know what you want to call that in science, in medicine or in the world in general, but it is research that has to be done. You have to know that."

Until a permanent solution can be found, Raisbeck can offer little hope for the farmer. And the only advice he can give is to wait and hope it dissipates naturally.

"If it's a cheap cow, the break-even point where it would be economically feasible to keep the cow is about .8 or .9 per million," Raisbeck says. "But if it's a well-bred cow, even if it has contamination levels as high as five or 10 parts per million, it may be worth keeping it just for the genetic value."

Of the dairy herds affected, two were cleaned up adequately through natural depletion of the heptachlor that the animals could be slaughtered for beef. Three are partially back on line. And the other two, well, those farmers, including Wright, are still hoping.

"They are still trying to wait it out, but it's looking pretty grim," Raisbeck says.

But farmers like Wright are determined to keep their farms at all costs.

"I've lived on a farm all my life," he says. "I'll stay here. I may have to get a job in town or go to work summers someplace, but I'm going to stay on the farm."

AROUND THE COLLEGE

Dean Robert F. Kahrs is president-elect of the Association of American Veterinary Medical Colleges. Kahrs was one of the first 40 veterinarians, and one of only four deans of veterinary medicine, to be elected to the National Academy of Veterinary Practice. The academy is one of nine composing the National Academy of Practice, an interdisciplinary group founded in 1981 to address issues of importance to national health. A bill pending before the Senate Judiciary Committee proposes that the National Academy of Practice be the legally constituted and chartered health policy body to represent the U.S. Congress.

Thirteen fourth-year veterinary students were named to the 1986 edition of "Who's Who Among Students in American Universities and Colleges." They were recognized for their outstanding campus leadership, academic achievement and service to the community.

The students are **Kevin T. Concannon, Martin G. Greenwell, David D. Martin, Kevin J. Kohne, Charles Barry, David Hall, David J. Kersting, Robert T. Dunn Jr., Imogene E. Hemeyer, Diana K. Stuckey, Glenn Grier, Ralph E. Hamor and Anita M. Watkins.**

Biomedical Sciences

Dr. Richard Adams, chairman and professor, received the Outstanding Teacher Award in Medical Pharmacology from Mizzou medical students. He presented "Calcium entry blockers in shock and trauma: new approaches to old problems" May

18-19 at the Ischemia-Shock Research Center, Thomas Jefferson University, Philadelphia. He published "Collaborative behavioral teratology study: results," with J. Buelke-Sam, C.A. Kimmel, C.J. Nelson, C.V. Vorhees, D.C. Wright, V. St. Omer, B.A. Korol, R.E. Butcher, M.A. Geyer, J.F. Holson, C.L. Kutscher and M.J. Wayner, in *Neurobehavioral Toxicology and Teratology*, 7:591-624, 1986.

Dr. John Amann, assistant professor, presented "Multiple Basophilic Cytoplasmic lesions in muscles of beige (Chediak-Higashi Syndrome) and heterozygous C57BL/6J mice" at the Federation of Associated Societies of Experimental Biology meeting April 14-16 in St. Louis. At the same meeting he also presented "Localization of beta-endorphin and ACTH in the intermediate lobe of the normal equine pituitary by immunocytochemical studies."

Dr. Esther Brown, professor, is completing the third edition of "Textbook of Veterinary Histology," a guide to the study of animal tissues, which she co-wrote with Dieter Dellmann.

Dr. Gheorghe Constantinescu, associate professor, presented "Accessory parotid lymph nodes and hemal nodes in the ox," "Atresia ani and common cloaca in a newborn female horse," "An uncommon right azygos vein and caudal vena cava in the dog," and "Right and left cranial vena cava (vena cardinalis cranialis sinistra persistens) and left azygos vein in a goat" at the American Association of Veterinary Anatomists meeting July 18-19 in Tuskegee, Ala.

Dr. Calvin Hale, assistant professor, was awarded a \$20,000 two-year grant from the Pharmaceutical Manufacturers Association and a \$24,981 one-year grant from the Missouri affiliate of the American Heart Association for his investigation of the Na⁺-Ca⁺⁺ exchanger protein of mammalian heart. This work addresses molecular aspects of regulatory subunit assembly and stoichiometry of the exchanger protein unit, and also holds promise for new classes of inotropic drugs for managing congestive heart failure. He received a three-year \$215,000 grant from the National Science Foundation for a project called "Endogenous regulation of the cardiac Na-Ca exchange system."

Dr. Ronald Korthuis, assistant professor, presented "ATP-MgC12 pretreatment or leukocyte depletion attenuate ischemia-reperfusion injury in skeletal muscle" and "Effects of experimental diabetes mellitus on splanchnic blood flow in the rat" April 11 at the Symposium on Transvascular Exchange in Microvascular Networks. He presented "Gastrointestinal circulation in diabetes mellitus" at the Symposium on Pathophysiology of the Splanchnic Circulation July 20-25 in Copper Mountain, Colo. He presented a seminar called "The intestinal circulation in diabetes mellitus" at the department of physiology at Louisiana State University, Aug. 28. **Dr. M.H. Laughlin**, associate professor, received the Fred A. Hitchcock Award for Excellence in Aerospace Physiology. The award, sponsored by the Aerospace Physiologist Society, is presented annually



Dr. Bruce Clark



Dr. Cecil Paul Moore



Dr. Doug Ward

New faculty

Dr. Bruce Clark, a former resident in theriogenology, has been appointed assistant professor in the department of medicine and surgery. Interested in computer technology, Clark has upgraded and expanded the computer use in Theriogenology Herd Health programs and research programs at the college.

Clark received his DVM in 1982 and his bachelor's degree in biochemistry in 1981 from Mississippi State University. He was a partner in a mixed practice for two years in West Point, Miss.

Dr. Cecil Paul Moore has rejoined the faculty as an associate professor of ophthalmology in the department of medicine and surgery. Moore spent two years as a resident and two years as an assistant professor at the college from 1978-82.

Moore, who became a diplomate in

the American College of Veterinary Ophthalmologists in 1980, spent the last four years as an assistant professor at the University of Wisconsin in Madison. He received his master's degree in anatomy from Wisconsin this year, his DVM from Missouri in 1972 and a bachelor's degree in zoology from Northeast Missouri State University in 1972. He also spent six years working as an associate veterinarian and then as a partner in small- and mixed-animal practices.

Dr. Doug Ward has joined the equine faculty in the department of medicine and surgery as an assistant professor.

Ward, who was an intern at the Equine Center from 1982-83, has spent the last three years as a resident in equine surgery at Purdue University. He received his master's from Purdue this spring, a DVM from Colorado State University in 1980 and a bachelor's degree in zoology from Montana State University in 1975.

for excellence in either operational physiology or physiological research. Laughlin was selected in recognition of his research on the physiological and pathophysiological effects of acceleration stress on the heart and cardiovascular system. As a result of his work over the past decade, acceleration stress as experienced during aerial maneuvers has been eliminated as a potential source of cardiac pathology. The work was published in the *Journal of Applied Physiology*, 1978 to 1980, and in *Aviation Space and Environmental Medicine* from 1978 to 1980 and 1986.

He presented "Effects of exercise training on the vascular flow capacity of the rat hindlimb

muscles" and "Control of muscle blood flow during sustained physiological exercise" at the Human Adaptation to Prolonged Activity meeting July 9-12 in Vancouver, Canada.

Dr. Robert McClure, professor, presented "Atresia ani and persistent cloaca in a newborn female foal," which he cowrote with G.M. Constantinescu and S.L. Nelson, at the American Association of Veterinary Anatomists meeting in Tuskegee, Ala. At the same meeting he presented a poster, "An uncommon right azygous vein and cadal vena cava in the dog," which he wrote with Constantinescu.

Dr. Chada Reddy, associate professor, presented "Antidotal use

of zinc and sodium sulfate against chronic cadmium intoxication in calves and mice" at the IV International Congress of Toxicology meeting July 21-25 in Tokyo, Japan. He published "Developmental stage specificity and dose response of Secalonic acid D-induced cleft palate and the absence of cytotoxicity in developing mouse palate," with B. Hanunaiah, T.G. Hayes and K.C. Ehrlich, in *Toxicology Applied Pharmacology*, 84:346-354, 1986.

Dr. Vincent St. Omer, professor, presented "Subtle neurotoxicology of prenatal exposure of rats to a 1:1 mixture of 2,4-D and 2,4,5-T on postnatal behavioral and neurochemical development" at the Society of Environmental Toxicology and Chemistry, Ozark-Prairie chapter, April 27-28 in Columbia. He presented "Some reproductive hazards of industrial chemicals" at the Hazardous Waste Management Fifth Annual Summer Institute Aug. 4-8 in Columbia. He published "Developing rat brain monoamine levels following in utero exposure to a mixture of 2,4-dichlorophenoxyacetic and 2,4,5-trichlorophenoxyacetic acids," with Fouad K. Mohammad, in *Toxicology Letters*, 29:215-223, 1985.

Diagnostic Laboratory

Dr. Thomas P. Brown, assistant professor, presented "The acute sequential pathology of oosporein mycotoxicosis in broiler chicks" to the American Association of Avian Pathologists at its annual meeting. He also received the Reed Rumsey Award for Avian Research from the AAAP.

Dr. William Fales, recently promoted to professor, presented "Use and comparison of minimal inhibitory concentration and disk diffusion antimicrobial susceptibility testing with bovine isolants of *pasteurella hemolytica* type 1 and *pasteurella multocida* recovered from Missouri cattle with bovine respiratory disease complex," which he wrote with J.N. Berg and L.G. Morehouse, at the Fourth International Symposium of Veterinary Laboratory Diagnostician, World Association, June 2-6 in Amsterdam, the Netherlands.

Dr. Ronald Friedlander, research associate, left the college in September and has accepted a

position with Foster Farms in Turlock, Calif.

Dr. Ann Kier, associate professor, presented the poster "Neutrophil phagocytosis in NZB/NZW F1 hybrid mice" at the annual Rheumatology Association meeting June 2-8 in New Orleans.

Dr. Emmett McCune, professor, presented "Investigations of litter moisture and microglora in turkey housing" at the North Central Veterinary Laboratory Diagnosticians and North Central Avian Disease Conference June 9-13 in Lansing, Mich.

Dr. L.G. Morehouse, professor, served as a representative of the United States to the board of directors of the World Association of Veterinary Laboratory Diagnosticians at the Fourth International Symposium of the World Association of Veterinary Laboratory Diagnosticians June 2-6 in Amsterdam, the Netherlands.

Dr. Merl Raisbeck, assistant professor, presented "Chlorinated pesticide contamination of livestock: observation from the Mo-Ark-Okla episode" and "Pesticide contamination of livestock" at the American Veterinary Medical Association convention July 20-24 in Atlanta. He also led the ABUT resident-graduate training committee at the convention.

Dr. Dan Shaw, instructor, published a "Testicular teratocarcinoma in a horse" with J.E. Roth in *Veterinary Pathology*, 23:327-328, May 1986.

Dr. Robert Solorzano, professor, presented "Evaluation of serological tests for pseudorabies and its epizootiology in the USA and Mexico" at the Fourth International Symposium of Veterinary Laboratory Diagnosticians June 2-6 in Amsterdam, the Netherlands.

Dr. Earl K. Steffen, research assistant professor, presented "A new semisolid agar medium for the isolation of *Salmonella* from rodent feces" with E.S. Hine and J.E. Wagner to the American Association for Laboratory Animal Science, 37th annual session, Oct. 8 in Chicago.

Dr. James R. Turk, associate professor, published "Synergism of bovine virus diarrhea virus and *pasteurella haemolytica* serotype 1," with R.E. Corstvet, J.R. McClure, K.A. Gossett, F.M. Enright and L.W. Pace, in *Bovine Respiratory Disease Complex*, Vol. 1, pg. 561-566, Aug. 26-29, 1986.

Medicine and Surgery

The Teaching Hospital bought a new diagnostic ultrasound machine, a full spectrum diagnostic unit that examines cardiac, abdominal and soft tissue structures.

The unit uses high frequency sound waves to delineate the position and organization of tissues and cellular margins. This allows the examiner to evaluate portions of organs not visible on plain radiographs. For example, ultrasound can be used to determine fetal viability by actually observing fetal motion and heart beat.

In cardiac disorders, the ultrasound unit enables the radiologist to evaluate cardiac function (valve and wall motion), heart size and relative chamber size as well as cardiac anomalies such as VSD in the sedated animal. This significantly improves the clinician's data base when treatment is prescribed or recommended. Since the ultrasound examination requires no anesthesia or preparation beyond the clipping of some hair, it is applicable to nearly all patients. The stress to the animal and the expense of the examination are relatively modest considering the benefit.

For abdominal disorders, evaluation of the parenchymal organ size, shape and architectures is possible. In addition, ultrasound can be used to guide needle biopsy or aspiration of one of these organs or even a single suspicious area.

The ophthalmology service of the department received a Zeiss Opmi 6 operating microscope for ophthalmic microsurgery. This state-of-the-art microscope features wide field binoculars for the surgeon, stereo observation objectives for the assistant surgeon, 35 mm photography, adjustable fiberoptic light source and foot control power focus and zoom lens mounted on a motorized floor stand.

The microscope will be used for cataract surgery and luxated lens removal, glaucoma filter procedures, keratectomies, repair of corneal lacerations and ruptured globes and removal of aberrant or ectopic hairs from the eyelids and conjunctiva. It will allow the ophthalmology service of the Veterinary Teaching Hospital to provide complete referral surgical services to practicing veterinarians throughout Missouri and surround-

ing states.

Dr. Everett Aronson was promoted to associate professor and awarded tenure. He published "Cor triatiatum dexter in a dog" with Alexander Stern, Ronald Fallon, Jimmy Lattimer, Robert McClure and David Holmberg in *Compendium of Continuing Education for Practicing Veterinarians*, Vol. 8, No. 6, June 1986, pg. 401-406.

Dr. Joseph Bojrab, professor, edited two books, "Pathophysiology in small-animal surgery" and "Current technique in small-animal surgery" and is writing a book about small-animal oral and dental surgery. He also published "Handbook of small-animal wound management." He presented "Superficial cosmetic surgery and wound healing" and "Surgery of G.I. system" at the South Dakota state meeting Aug. 19-20 in Sioux City, S.D. Bojrab presented "Cervical disc disease" and "Open wound management and bandaging" at the American College of Veterinary Surgeons June 19 in Frankfurt, West Germany.

Dr. William Braun, associate professor, presented "Goat embryo transfer" and "Dairy goat herd health" at the American Veterinary Medical Association meeting July 20-24 in Atlanta.

Dr. Claud Chastain was promoted to professor and awarded tenure. He presented "Cytogenetics of the dog and cat" and "Screening evaluation for glucocorticoid deficiency in dogs: the modified thorn test" at the annual forum of the American College of Veterinary Internal Medicine May 21-27 in Washington, D.C. With V.K. Ganjam, professor of biomedical sciences, he co-wrote "Clinical entocrinology of companion animals," a textbook, published in June by Lea and Febiger.

Dr. E. Allen Corley, professor, presented "Hip dysplasia: OFA perspective" at the College of Veterinary Radiology meeting Aug. 10 in Incline Village, Nev.

Dr. James Creed, professor and chairman, presented "Management of long bone fractures in the dog/cat" at the Central Arizona Veterinary Medical Association meeting June 14 in Phoenix, Ariz.

Dr. Eleanor Green, assistant professor, presented "Equine pre-purchase examination; legal or liable" at the American Veterinary Medical Association meeting July 20-24 in Atlanta.



As an intern, Leonette White worked with Dr. Ann Kier.

PATRICK NICHOLS

High schoolers research careers

Six high-school students spent the summer learning about rabies, heptachlor contamination and parasitic diseases during a summer internship at the College of Veterinary Medicine.

Five Columbia minority students participated in the college's first Student Research Apprentice Program, sponsored by the National Institutes of Health and the University's Office of Equal Opportunity. The program was directed by Professors Vincent St. Omer and V.K. Ganjam.

The students, mostly seniors in high school, were recommended for the project by their science teachers. Each student was matched with a faculty member, working on a research project related to the student's future field of study. At summer's end, they wrote reports on the research they had completed.

Michael Wang studied the relationship between the parasite and its host with Dr. Robert Corwin, professor of microbiology.

Dr. Manuel Torres-Anjel, associate professor of microbiology, worked with Latonya Prince on a study of rabies.

Jim Oglesby studied the heptachlor contamination problem in Missouri with Dr. Merl Raisbeck, assistant professor in the diagnostic laboratory.

Leonette White worked with Dr. Ann Kier, associate professor of pathology, researching a colony of cats descended from a Hagan

deficient female discovered by Kier.

Jeff St. Omer worked in the laboratory of Dr. Gary Johnson, associate professor of pathology, and tested his pet dog for Von Willebrand's diseases.

"Looking at the amount of expense the college put into it, the program was a success beyond our expectations," Ganjam says. "The students said they all enjoyed it and learned a lot.

"But the faculty, in turn, came back to us and said they were excellent, highly motivated students."

Another high-school student, Trina Williams, spent the summer at the college as part of the Howard University-Rockefeller Foundation Program in Life Sciences Careers. The program has sponsored 24 internships at the college since 1979, says Associate Dean Kenneth Niemeyer.

From Hayti in Missouri's bootheel, Williams spent the six weeks rotating among the college's departments and working with faculty and students.

One past intern of the program, Kim Grove, is now a senior animal science major. She works part time in the research animal diagnostic investigative laboratory and plans to enter the college next year.

"I feel very comfortable here—it's not a strange place. I know the doctors," Grove says. "Through the program, I got to see more of veterinary medicine than just small-animal care."

Dr. W. Grant Guilford, resident, presented "Bladder stones in the dog" at the Bichon Frise national meeting May 7 in Kansas City.

Dr. Michelle L. Haven is an intern at the Equine Center following graduation from the University of Illinois last spring.

Dr. Brent Jones, associate professor, edited "Canine/Feline Gastroenterology," published in March 1986 by the W.B. Saunders Co. He also contributed chapters to the multi-authored volume, which deals with the digestive processes and problems of cats and dogs.

Dr. Jimmy Lattimer was promoted to associate professor and awarded tenure.

Dr. Terri McCalla is a new resident in ophthalmology after spending two years in a small-animal practice in Arizona. She is a graduate of Oregon State University.

Dr. Clifton Murphy, instructor, taught embryo transfer at ITESM College July 16-28 in Monterrey, Mexico. Murphy received a \$25,000 Missouri Research Assistant Act Grant, and a \$5,029 award from Formula Grants Funds.

Dr. James Thorne, professor, presented "Life or death—the neonates dilemma" and "Each breath for life—interactions in bovine respiratory diseases" at the American Veterinary Medical Association convention July 20-24 in Atlanta.

Dr. James Tomlinson, assistant professor, published "Caudal approach to the shoulder joint in the dog" with Gheorghe Constantinescu, Robert McClure and M. Joseph Bojrab in *Veterinary Surgery*, Vol. 15, No. 4, pg. 294-299, 1986.

Dr. David Weaver, professor, has written "Bovine surgery and lameness," which was published in April by Blackwell Scientific Publishers of Oxford, England.

Dr. William Wolff, associate professor, presented "Sheep flock health" at the American Veterinary Medical Association convention July 20-24 in Atlanta.

Dr. Robert Youngquist, recently promoted to professor, presented a "Bovine infertility" seminar and led the American College of Theriogenologists and American Association of Equine Practitioners sessions at the American Veterinary Medical Association meeting July 20-24 in Atlanta.

Microbiology

Dr. Hans K. Addinger, professor, published a chapter called "Transmission and control of viral zoonoses in the laboratory" in the Manual of Laboratory Safety, American Society for Microbiology, pg. 72-89, 1986. He presented the poster, "Epstein-Barr virus nuclear antigen (EBNA-2) genes characterize M-ABA and Jijoye prototypes," at Molecular Biology Week April 16 at Mizzou.

Dr. David Thawley, recently promoted to professor, presented "Investigation of pseudorabies virus latency by DNA hybridization" at the ninth congress of the International Pig Veterinary Society meeting July 13-21 in Barcelona, Spain.

Dr. Manuel Torres-Anjel, associate professor, presented "Advances in the study of rabies wasting" April 28-May 1 at the Winstar Institute in Washington, D.C.

Pathology

Department faculty co-wrote seven chapters in the "Manual of Microbiologic Monitoring of Laboratory Animals," edited by A.M. Allen and T. Nomura and published by the National Institutes of Health and the U.S. Government Printing Office in 1986. The faculty and their respective chapters are: **Dr. Joseph Wagner** and K. Fujiwara, "Sendai Virus"; **Drs. Cynthia Besch-Williford** and **Wagner**, "Pasteurella pneumotropica" and "Actinobacillus spp"; **Wagner** and N. Kagiya, "Salmonella spp"; and **Wagner**, P.L. Farrar and N. Kagiya, "Spirochete muris" and "Syphacia spp."

Dr. David Bean-Knudsen, research associate, published "Evaluation of the control of *Myobia musculi* infections on laboratory mice with permethrin" with Drs. Joseph Wagner and Robert D. Hall in Laboratory Animal Science, June 1986, Vol. 36, No. 3, page 268-270.

Dr. Linda Collier was promoted to associate professor and awarded tenure. She presented "Fluorophores of Chediak-Higashi feline retinal pigment epithelium" at the annual meeting of the Association for Research in Vision and Ophthalmology April 27-May 2 in Sarasota, Fla. She presented "Ocular pathology of Chediak-Higashi syndrome" Aug. 21 in East Lansing, Mich.

A list of her publications follow:

"Postmortem findings in four litters of dogs with familial canine dermatomyositis," with A.M. Hargis, D.J. Prieur, K.H. Haupt and J.F. Evermann in the American Journal of Pathology, 132:480-496, 1986.

"Ocular and central nervous system cryptococcosis in a dog," with A.E. Jergens and C.A. Wheeler in the Journal of the American Veterinary Medical Association, 189:302-304, 1986.

"Postmortem findings in one Shetland sheepdog with dermatomyositis," with A.M. Hargis, D.J. Prieur and K.H. Haupt in Veterinary Pathology, 23:509-511, 1986. "Age-related changes of the retinal pigment epithelium of cats with Chediak-Higashi syndrome," with E.J. King and D.J. Prieur, in Investigative Ophthalmology and Visual Science, 41:702-707, 1986.

"The lesions associated with a lysosomal storage disease of sheep," with R.D. Murnane, D.J. Prieur, A.J. Ahern-Rindell, S.U. Walkley and S.M. Parish, in Federal Proceedings, 45:702, 1986. "Neutropenia in cats with the Chediak-Higashi syndrome," with D.J. Prieur, in Federal Proceedings, 45:960, 1986.

"Fluorophores of Chediak-Higashi feline retinal pigment epithelium," with G.E. Eldred, E.J. King and D.J. Prieur, in Investigative Ophthalmology Vis. Science, 27 Supplement: 202, 1986. "Abnormalities along Bruch's membrane in adult cats with Chediak-Higashi syndrome," with E.J. King and D.J. Prieur, in Investigative Ophthalmology Vis. Science, 27 Supplement: 256, 1986.

"Quantitative studies of canine conjunctival goblet cells," with C.P. Moore and N.J. Wilsman, in Investigative Ophthalmology Vis. Science, 27 Supplement: 27, 1986.

Dr. Susan Gibson, research associate, served during July and August as clinical veterinarian in the Division of Laboratory Animal Resources at Columbia University in New York. She presented "A retrospective study of cryptosporidiosis in Guinea Pigs," which he co-wrote with J.E. Wagner, at the 37th annual session of the American Association of Laboratory Animal Science Oct. 6-10 in Chicago.

Dr. Gary Johnson was promoted to associate professor and awarded tenure.

Dr. Curt M. Matherne, research associate, presented "Myeloprolifera-

tive syndrome in two owl monkeys," which he co-wrote with S.V. Gibson, S.T. Kelley and J.E. Wagner, at the 37th annual session of the American Association of Laboratory Animal Science Oct. 6-10 in Chicago.

Dr. Bonnard Moseley, presented "Current disease problems in Missouri" at the Alltechs Second Annual Biotechnology in the Feed Industry Symposium April 22-25 in Nicholasville, Ky.

Dr. John E.K. Mrema, research assistant professor, published "Selected serum biochemical values of reference F1 colony-born monkeys (*Aotus lemurinus griseimembra*)," with M.B. Heidari, D.A. Schmidt and T.J. Green in Veterinary Clinical Pathology, Vol. 15(1)6, 1986.

Dr. Leroy Olson, professor, presented "Comparison of TGE vaccines" at the ninth annual Congress of the International Pig Veterinary Society meeting July 12-19 in Barcelona, Spain. He published "Onset and duration of immunity and minimum dosage with CU cholera vaccine in turkeys via drinking water," with Gerald T. Schlink in Avian Diseases, Vol. 30, No. 1, 87-92, 1986. He published "Tiamulin in drinking water for treatment and development of immunity to swine dysentery" in the Journal of the American Veterinary Medical Association, Vol. 188, No. 10, 1165-1170, 1986.

Dr. Joseph Safron, research associate, presented "Low level combustion byproducts as a potential inciting factor in miniature pig pneumonia," with H.F. Stills Jr. and P.A. Skavlen, at the 37th annual session of the American Association of Laboratory Animal Science Oct. 6-10 in Chicago.

Dr. Larry P. Thornburg, associate professor, published "Chronic liver disease associated with high hepatic copper concentration in a dog," with G. Rottinghaus and H. Gage, in the Journal of the American Veterinary Medical Association, Vol. 188, No. 10, 1190-1191, 1986.

Dr. Joseph Wagner, professor and chairman, received a \$149,773 grant from the National Institutes of Health for research at the Animal Diagnostic and Investigative Laboratory. He presented "Quality control in Diagnostic Laboratories—Parasitology" at the 37th annual session of the American Association of Laboratory Animal Science Oct. 6-10 in Chicago.

PEOPLE

'54

Bill Monsees, DVM, announces the arrival of a granddaughter, Jillian Lynne, born last summer. That makes six grandchildren for the Fayetteville, Ark., resident.

'56

George Bilyea, DVM, has his own small-animal practice in Overland Park, Kan., but that does not keep him from showing his Tiger spirit. He rarely misses a Mizzou game (especially against KU), his license plate reads "Tigerr" and his bumper sticker says, "I brake for all

animals...except Jayhawks." He also has been active for 15 years in the Boy Scouts of America, an interest he developed after his son, David, started scouting.

'57

Buck Lindsey, DVM, of Carmel, Ind., was recognized as the Industrial Veterinarian of the Year at the American Veterinary Medical Association convention July 20-24 in Atlanta.

'76

Lloyd Gloe, DVM, practices with two Missouri graduates, **Roger Cole, DVM '76**, and **Vince Caldwell, DVM '80**, in Marshfield, Mo.

'77

Terry Mitchel, DVM, is an associate in a mixed-animal practice in Clinton, Mo.
Jerry Eber, DVM, works as a regulatory agent for the Missouri Department of Agriculture. He covers Vernon, Bates, St. Clair and Henry counties in southwest Missouri.



ALUMNI

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Notes

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Alumnus; University Library privileges; first chance on exciting travel tours sponsored by the Alumni Association; a locator service to find fellow alumni; association with a great group of former students; and on payment of an additional \$8, issues of *Tiger Sports*

weekly during the football season and periodically from December to May.

Send your payment to Alumni Association, 132 Alumni Center, Columbia, Mo. 65201.

'79

Donna Walton Angarano, DVM, has joined the faculty of Auburn (Ala.) University as an associate professor in dermatology.

Diane J. Okrent Gaertner, DVM, of New Haven, Conn., is an assistant professor of comparative medicine at Yale Medical School and a diplomate in the American College of Laboratory Animal Medicine.

'83

Ginger Frazer Stiver, DVM, opened the Animal Day Care Center of South Kansas City in June. The practice has a full-time professional trainer, a groomer and nine employees. Stiver's husband, Greg, also opened his dental clinic next door in June.

'84

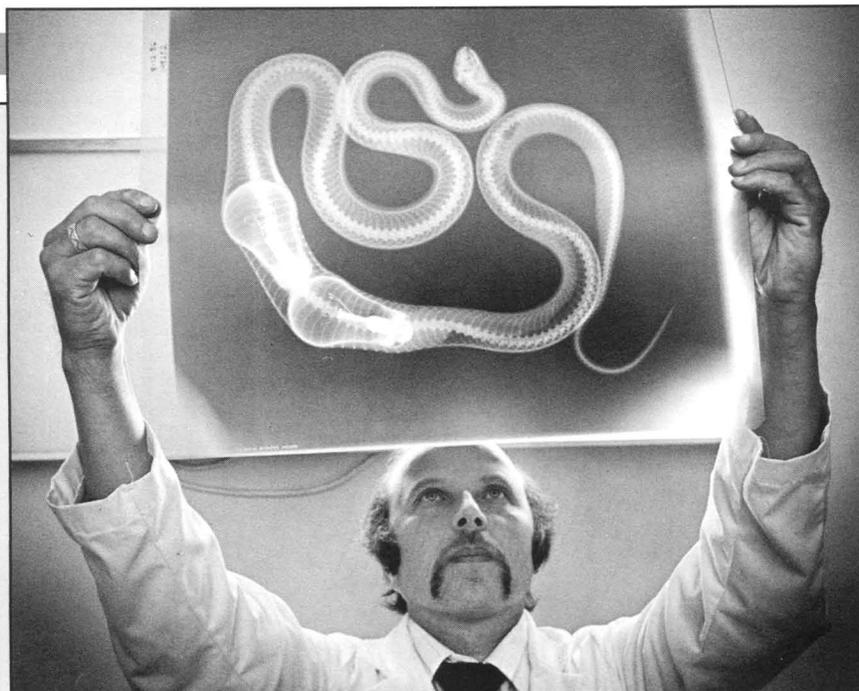
Lynn Allen, DVM, married Steve Hanley Sept. 7. They live on a farm in Kingsville, Mo. Allen is employed with the Animal Emergency Clinic in Kansas City and in mixed-animal practice at Warrensburg (Mo.) Animal Hospital.

'85

Jeffery Randall Knibb, DVM, married **Roxanne Damon, DVM** '86, Aug. 23 in St. Louis. He works at Equine Medical Associates in St. Louis and she is employed by the Clark Animal Hospital, also in St. Louis.

'86

Norman Manning, DVM, of Pinehurst, N.C., won first prize in the National Nutrition Scholar's Award Competition for his paper "Dietary management of canine intestinal lymphangiectasia: a case report and literature review." Dr. Brent Jones, associate professor of medicine and surgery, served as clinician on the case. Manning, who received the award July 20-24 at the American Veterinary Medical Association Convention in Atlanta, received \$10,000. A matching grant was given to the college.



Elliot Jacobson removed two lightbulbs from a snake.

JOHN MORAN

Snake's prognosis: 'bright indeed'

Elliot Jacobson, DVM, PhD '75, spends most of his time at the University of Florida College of Veterinary Medicine working with exotic animals. But he performed his most exotic surgery on a 4-foot pine snake named "G.E."

The snake, which was found by an elderly couple near Gainesville, Fla., had swallowed two 15-watt lightbulbs.

Jacobson, a clinician in the zoological and wildlife service at the University, removed the bulbs during a 1½-hour surgery through a 2½-inch incision in the snake's stomach. The bulbs probably would have crushed the blood vessels in the snake's stomach wall had they not been removed.

The nonpoisonous snake, which is a protected species in Florida, recovered well from the surgery. The snake was released after a month, and as for its future, it "looks very bright indeed," he says.

The unusual surgery generated a lot of interest, not only at the college, but also in the local and national press. Jacobson's face graced the front page of the Gainesville Sun and the story was carried by national newspaper wire services. People magazine also profiled the doctor and his snake in the Sept. 1 issue.

"I got letters from all over the world," he says. "I got one from a vet in the Philippines who was interested in reptiles and wanted to know more about the surgery."

Although the surgery was different for Jacobson, it was by no means unique. He has removed golf balls from a snake, hardware from an ostrich and fishing line from a crocodile.

"Since the golf balls, this is probably the most interesting foreign-body ingestion I've ever had."

Dan Wakefield, DVM, has joined the staff of the Anderson (Mo.) Animal Hospital. He and his wife, Pat, live near Pineville, Mo., with their two children, Dan, 14, and Amanda, 11. Pat teaches kindergarten in Neosho, Mo.

DVM '72, died Aug. 15 in Overland Park, Kan., at age 43. Lyle, a former science teacher and track coach, owned Nall Hills Animal Hospital. Survivors include his wife, daughter and three sons.

Obituary

John Richard Lyle, BS Ed '65,

Letter

Editor:
The fall 1986 issue of *Veterinary*



MARK WOODS

Vet shares animals with young patients

When **Richard Rowland**, BS Agr '82, DVM '86, is not practicing veterinary medicine at his clinic, he is practicing medicine of a different sort on the pediatrics floor of University Hospital and Clinics in Columbia.

Rowland, who opened Buttonwood Animal Hospital in Columbia in November, regularly takes pets—generally a dog or a cat, but sometimes a donkey or a goat—to

"It just gives me that chance to make their hospital stay a little less traumatic," says Dr. Richard Rowland.

entertain the children at the hospital.

"I love kids, and it just gives me the chance to make their hospital stay a little less traumatic," he says. "When I am in there with my pets, these kids may have IV's hanging out of their arms, but they forget it. It lets kids be kids.

"I get a lot of smiles. Sometimes kids who have gone through terrible ordeals will not have smiled for months. But by the time I leave, they have done some grinning and chuckling."

Rowland, who has been visiting the hospital since July, tries to see the young patients once or twice a week. He started after his wife, Kathy, a pediatrics nurse at the hospital, told him how lonely the children were.

During the two-hour visits, the children pet and cuddle the animals. In exchange, some pets perform tricks for the children.

Next year Rowland, father of two young daughters, would like to take some exotic animals from the Kansas City Zoo to the hospital.

"The children really look forward to my coming," he says. "By the time I walk through the door, the kids are hollering and screaming about the animals."

Medical Review is interesting to a graduate of the College of Veterinary Medicine. Dr. Arthur Case and others were certainly devoted to the teaching of veterinary medicine. The student on Page 5 holding the dog is Dr. Robert Mutrux, BS Agr, DVM '53, of Wheaton, Mo.

Reading the article and seeing the pictures in anatomy of the students and the late Dr. Joseph E. Weinman reminded me of how the anatomy specimens were prepared. Weinman used to buy live horses from a trader (I believe his name was Bradley). On a given day, the truckload of horses were delivered and unloaded. The freshmen students were then subjected to a minicourse in veterinary medicine.

While the animals were still alive, we did rectals, neurectomies, determined the age, gave a wad of paper simulating a bolus (without a balling gun), trimmed feet, passed the stomach tube and various other manipulations. Subsequently, we were asked to estimate the weight and then told to figure the dose of either intravenous or oral chloral hydrate. The dose was approved, then the animal anesthetized and eventually euthanatized. Formalin followed by color starch was pumped into the vascular system. Thus, the cadaver was prepared by the student for future dissection. The better we prepared our specimens, the better they were preserved and the more distinctly the vascular system was delineated and the easier it was to locate the vessels.

I personally thought it futile at the time to go through this ordeal, but as time passed, I have come to the conclusion that it was far more beneficial than detrimental. Certainly Weinman had the students' welfare at heart. He actually tutored one student in our class to help him pass. How many of us would do that today?

We indeed do owe our professors a debt of gratitude. Perhaps one way we can show it is by attempting to make a better veterinary medicine in our respective fields of endeavor. Financial support of the College of Veterinary Medicine also would honor our former devoted teachers. Sincerely,

Clair M. Hibbs, BS Agr '49, DVM '53

Director of veterinary diagnostic services
New Mexico State University

Gary Atkinson, shown with wife Judy, directs the \$1 million facility.

Hospital constructed

Ground breaking began in July on the new \$1 million facility for the County Animal Hospital Ltd. in St. Louis. Construction should be completed by March.

Gary S. Atkinson, BS '71, DVM '74, is director of the hospital. Atkinson is also a new University Jefferson Club member and the president of the Veterinary Alumni Association.

The state-of-the-art facility will contain a surgical heart monitor, a trans-telephonic electrocardiograph hook-up to a veterinary cardiac glucose machine, an ultrasonic dental scaler, a complete pharmacy,



and orthopedic plating and pinning equipment.

The hospital, which will be staffed by six veterinarians, also will feature a twin surgery suite with a viewing mirror so owners can watch their pets throughout the operation.

Nominations sought for prestigious award

The most prestigious award granted by the Veterinary Medicine Alumni Organization is the College of Veterinary Medicine Alumnus of the Year award. The program is now in its third year. To continue the high caliber of this award, we need your help.

Use the attached coupon to nominate a graduate who has made outstanding contributions within the profession of veterinary medicine as well as beyond the profession, in community, state or national activities.

Keep this outstanding tradition alive. Fill out the nomination form today.

My nominee is

Dr. _____

A resume may be obtained from

Address _____

The recipient MUST be present at the annual fall conference to receive the award. Mail nomination form to Dr. K.H. Niemeyer, 203 Veterinary Medicine Building, University of Missouri, Columbia, Mo. 65211.



Kenneth H. Niemeyer

Alumnus earns highest honor

Kenneth H. Niemeyer, BS Agr, DVM '55, MS '62, on Nov. 9 received the highest honor a graduate of the College of Veterinary Medicine can receive: the Alumnus of the Year award.

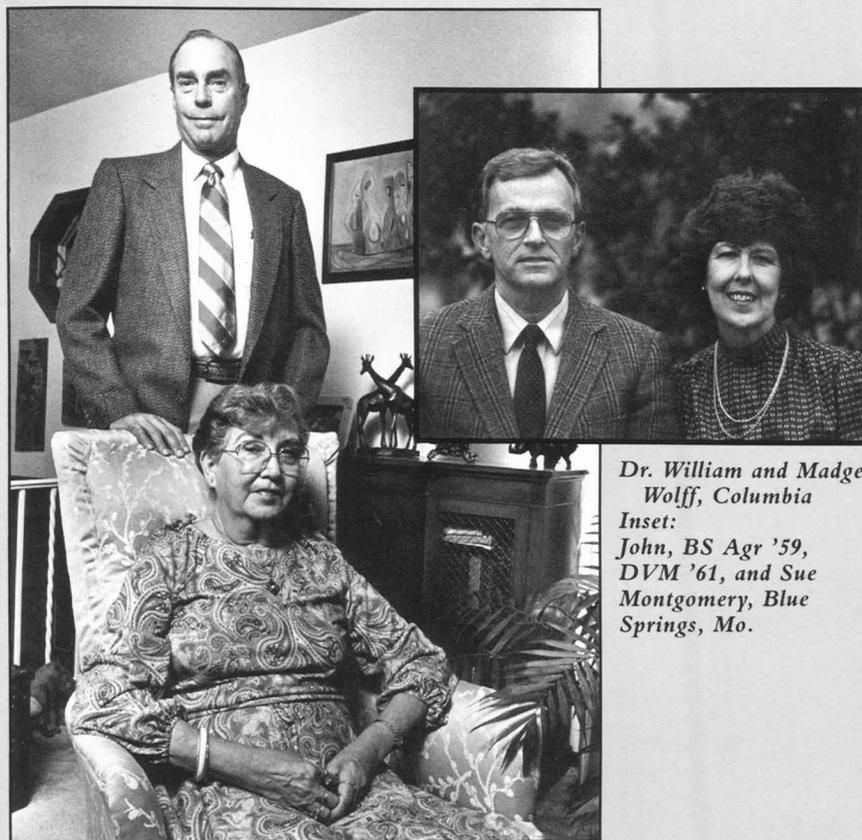
The award is given annually by the college's Alumni Association to alumni who have shown outstanding contribution to the veterinary profession and the community, says St. Louisan **Gary S. Atkinson**, BS '71, DVM '74, president of the association. Recipients are chosen by an independent three-person jury of community leaders on the basis of achievement in research, private practice, teaching or other professional endeavors.

The associate dean for academic and alumni affairs, Niemeyer is responsible for maintaining relations with preveterinary students, professional students and alumni. His responsibilities include counseling for students who wish to enter the college, admissions, and alumni reunions, receptions and publications.

Niemeyer, who served as interim chairman of medicine and surgery from 1981-82, presently heads a number of committees at the college, including admissions, scholarships and resident-intern.

Recently he and his wife, Margaret, became members of the University's Jefferson Club. The Niemeyers established the Niemeyer Lecture Fund in Veterinary Medicine, which helps pay the cost of individuals brought to the college to deliver lectures to veterinary students and faculty.

New Jefferson Club members



Dr. William and Madge Wolff, Columbia

*Inset:
John, BS Agr '59,
DVM '61, and Sue
Montgomery, Blue
Springs, Mo.*



PATRICK NICHOLS

Couple's children make Mizzou education tradition

During the Iowa State football game, Dr. Louis Corwin Jr., professor of medicine and surgery, and his family were recognized for an unusual accomplishment: Eight of the nine Corwin children have either graduated or are enrolled at the University. The last will be encouraged to attend when she graduates from high school next year. "We just assumed Mizzou was the best place to go," says Shirley Corwin.

Veterinary Medical Review

College of Veterinary Medicine
and Cooperative Extension Service

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