

Spring 1991

University of Missouri
Columbia


VVMR

College of Veterinary Medicine and Cooperative Extension Service

**Research
that Helps
Researchers**



Dean's Column

College looks back with pride and ahead with enthusiasm

1990 was a year of pride and accomplishment for your College in many ways.

One of the highlights was the generous gift from Leonard O'Brien, owner of Cloverleaf Farms in Foristell, Mo., of a herd of purebred Santa Gertrudis cattle for teaching and research. Students will work with the herd, and learn herd health and management and preventive medicine.

A source of pride and pleasure is the construction of the new teaching hospital. Progress has been evident on a weekly basis and reminds us that our College is preparing to meet future challenges and goals. We've also seen considerable progress in the development of a facility at Middlebush Farm for the study of animal and poultry diseases.

And in 1990, the Jefferson Club boasted an all-time high of 82 members.

As we celebrate the positive events in 1990, it's sometimes easy to forget that the College, as well as other state agencies, is suffering from cuts in state support due to revenue shortfalls. While we all regret Missouri's stinginess in funding higher education and other essential services, we applaud the state's fiscal responsibility and are glad that Missouri has not accumulated massive deficits like many other states have.

Although we're only a few months into 1991, it, too, is shaping up to be an exciting year. On May 10, your College graduated 64 new veterinarians representing a well-balanced mix of professional talent and a variety of career goals. The graduating class was made up of 34 men and 30 women, including former Miss America Debbye Turner. Three of the graduates had simultaneously pursued graduate studies aimed at possible research

careers. We're proud of all 64 graduates and wish them the best in all their endeavors.

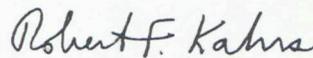
The College has many alumni of which it's proud, and we're pleased to congratulate two alumni who have attained important positions in the profession. Dr. Gerald Johnson, DVM '56, was chosen president-elect of the AVMA, and his classmate, Dr. Leon Russell, DVM '56, was elected chairman of the AVMA executive board.

A member of our faculty also deserves congratulations. Dr. Al Hahn, professor of veterinary medicine and surgery, was elected chairman of the MU Faculty Council, a major force in the academic body politic.

We're also proud to welcome a new director of the Veterinary Medical Extension and Continuing Education programs. Dr. David Hardin, DVM '77, returns to our College from a faculty position at Mississippi. He'll be joined by Dr. Rick Tubbs, who received a DVM in 1983 from Auburn. Tubbs will serve as swine health extension specialist. We also plan to recruit a ruminant health specialist.

Your College has been active in reviving and preserving traditions as well as welcoming change and innovation. By the time you read this, the first St. Louis Polo Club benefit game to support the College will have occurred. Up until the late '30s, polo with ROTC ponies was big at MU. The College, in cooperation with the MU Alumni Association, encouraged the reappearance of this tradition.

Thank you and best regards,



ROBERT F. KAHRs, dean

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ON THE COVER: Lizabeth Terril, a resident in the Laboratory Animal Medicine Program at the College, has conducted research on the peripheral nervous system of zinc-deficient guinea pigs in order to gain a better understanding of changes in the nervous system that are associated with diabetes in humans. Photo by Ian Sights.



N.S. Volume 11

Number 1, 1991

The Veterinary Medical Review is published biannually by the College of Veterinary Medicine and Cooperative Extension Service of the University of Missouri-Columbia. Editorial office: 1208 St. Christopher, Columbia, Mo., 65203; phone (314) 875-3906. Marinell Landa, editor; Bruce Meentemeyer, designer; Ian Sights, contributing photographer.

by Marinell Landa

Research that Helps Researchers



IAN SIGHTS PHOTO

In the world of research using laboratory animals, a carefully controlled environment is essential to ensure accurate, scientifically sound results.

But animals used in research occasionally become infected with a virus, bacteria or parasite that is unrelated to the investigation. And such infections not only jeopardize the health of the animals, but also undermine an investigation, according to Dr. Joseph Wagner, chairman

of the department of veterinary pathology.

The faculty and students in the Laboratory Animal Medicine program at the University run tests and conduct extensive analyses of the animals to keep diseases in check. Their skills and trouble-shooting abilities are indispensable for the researchers they assist.

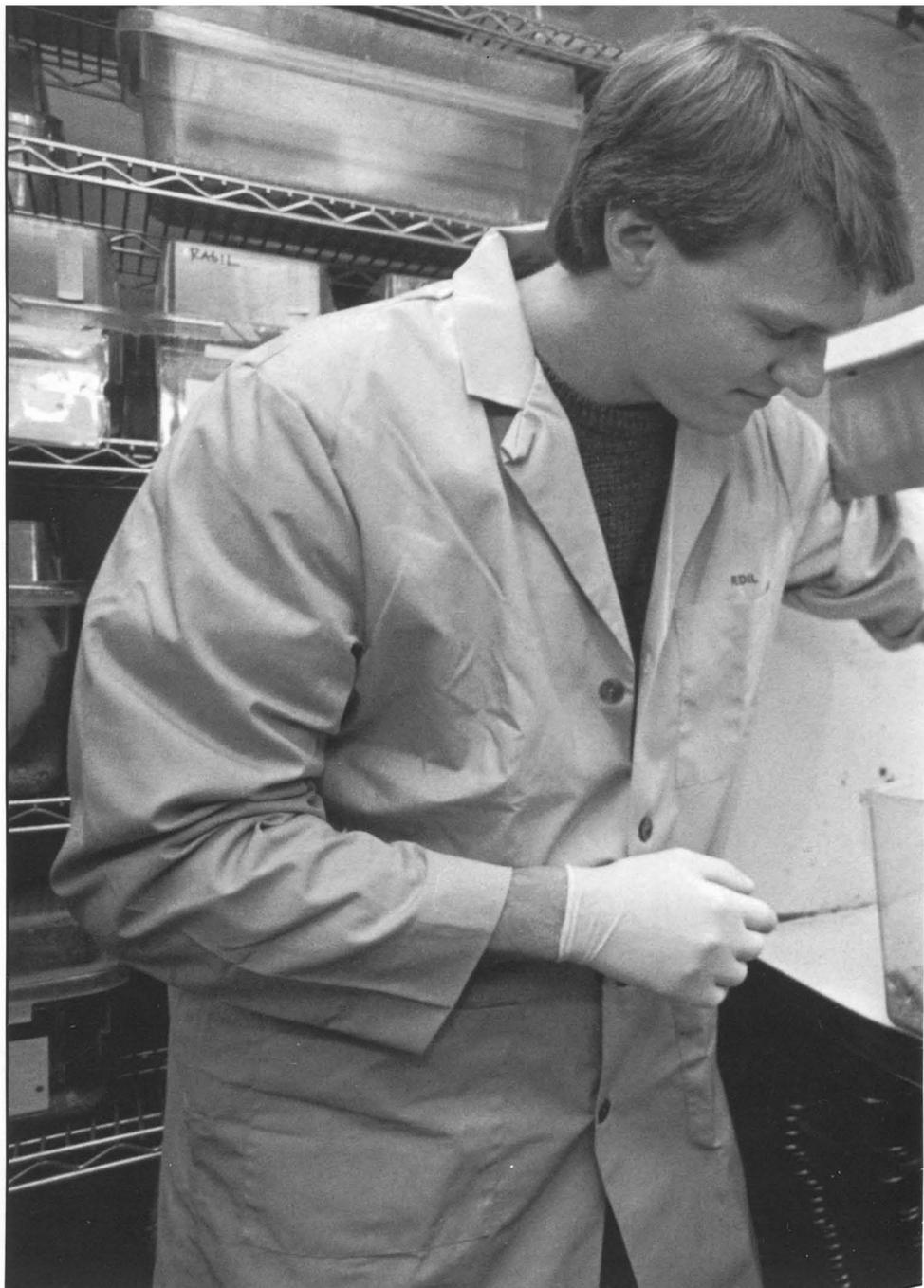
"Basically, what we provide the animal research industry is information that it uses to manage

Donna Clemons collects antibody-rich fluid from a rabbit. Rather than doing an ear-bleed, the typical method for gathering fluid, Clemons, a resident in the Laboratory Animal Medicine program, extracts fluid from a subcutaneous implant. This procedure, she says, has proven to be painless for the animal.

colonies of research animals," Wagner says. "If the animal is showing an abnormality, we try to figure it out."

The laboratory animal medicine

“Our bread-and-butter activity is centered around service to the biomedical research community. Because of that service activity, we will always have a major thrust in teaching and training,” says Dr. Cynthia Besch-Williford

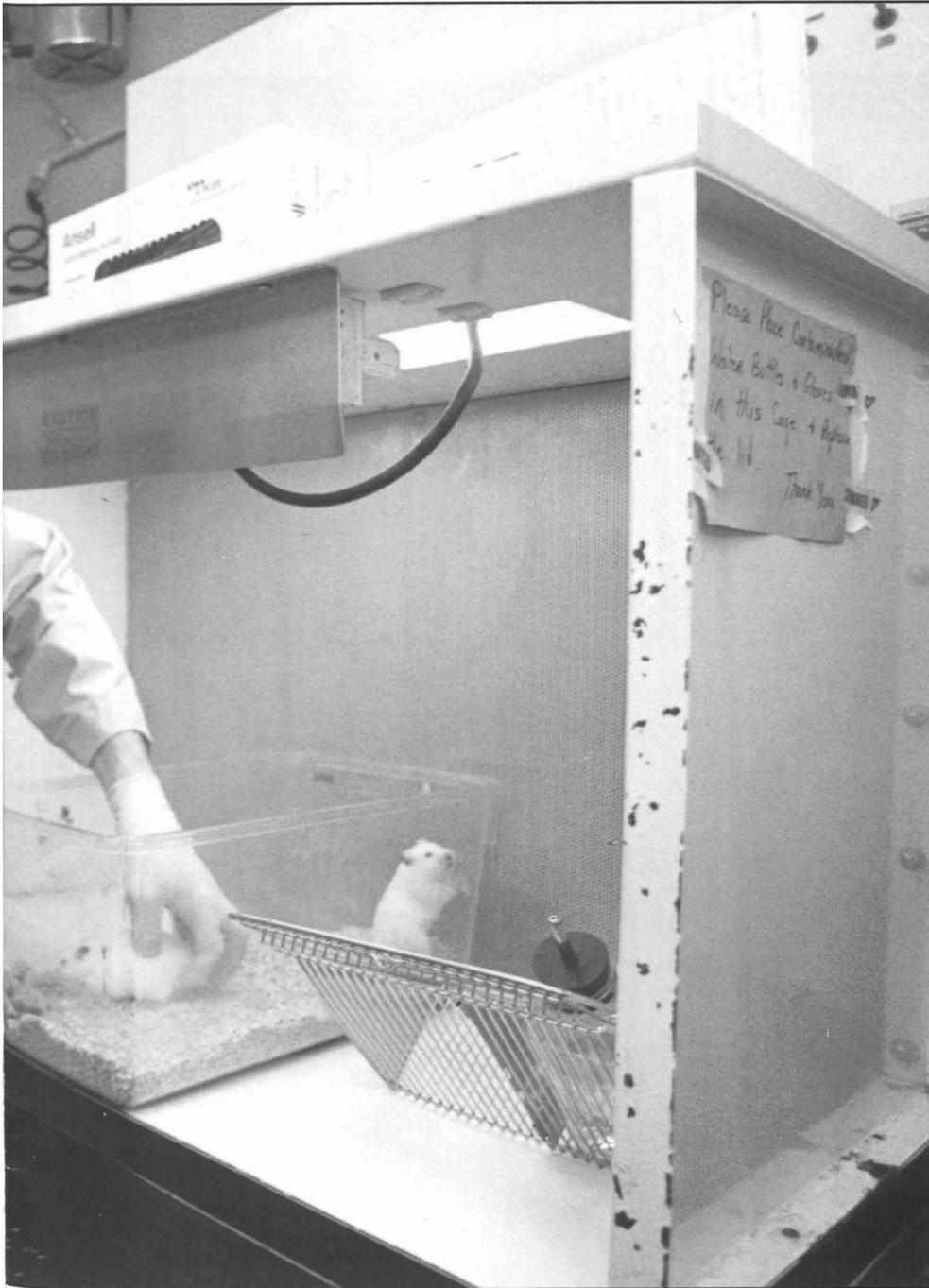


program, which began in 1965, includes a post-DVM residency training program that receives funding from the National Institutes of Health. Wagner says the faculty recruit nationally for the program and generally accept 10 to 14 residents annually for training.

Residents spend at least three years in the program, attending graduate courses, conducting research and completing on-the-job residency training duties. Wagner says the first 18 months of the residency program are divided into three six-month assignments. A resident may spend the first six

months with Drs. Ron McLaughlin and Richard Fish in the Office of Laboratory Animal Medicine at University Hospital. There, residents participate in laboratory animal colony management and clinically monitor the health of small laboratory animals such as mice, rats, rabbits and guinea pigs.

After their introduction to caring for laboratory animals, residents usually spend the second six-month residency period in the Research Animal Diagnostic and Investigative Laboratory, RADIL, which began in 1968 and also is funded by NIH, focuses on the diagnosis and study of



IAN SIGHTS PHOTO

As part of his work in the Research Animal Diagnostic and Investigative Laboratory, Dave Besselsen, DVM '88, performs extensive examinations of laboratory animals, such as these hamsters. His diagnoses can detect the presence of infectious diseases that could sabotage research.

naturally occurring diseases of research animals.

"At RADIL, students learn how to do a wide variety of different tests to assess the health status of the animals," Wagner says, adding that students receive training in serology, pathology, microbiology and parasitology.

Dave Besselsen, DVM '88, who entered the program in July after working two years in a small-animal practice in Jacksonville, Fla., is currently working in RADIL on a contract with a company that supplies animals to biomedical researchers. Besselsen examines the

animals the company sends to determine if they are carrying diseases or abnormalities.

"We do a complete diagnostic workup on the animals that are sent to us and basically look for any abnormal tissue," he says.

The workup also includes serologic, or blood tests and cultures of the intestinal tract and upper respiratory tract. Besselsen adds that he is primarily concerned with infectious diseases that could run rampant in a colony of laboratory animals.

RADIL provides a training ground for students interested in diagnostic

laboratory animal medicine, says Dr. Cynthia Besch-Williford, associate director of RADIL and assistant professor of veterinary pathology. She says students learn how to anesthetize and examine the animals, and how to euthanize them for the purpose of conducting a necropsy, the animal world's equivalent of an autopsy. Students also assist in necropsies and collect tissue samples, Besch-Williford says.

"Our bread-and-butter activity is centered around service to the biomedical research community," she says, adding that the diagnoses and evaluations done in the lab help researchers determine if the data they collect will be valid.

RADIL also assists those who raise animals such as rodents and rabbits for research purposes to breed the healthiest animal possible.

In addition to diagnostic work, students also have a chance to participate in research projects at the RADIL. One such project involves the study of a mouse hepatitis virus, a highly infectious virus that can spread quickly through a research animal colony.

Another project could reduce the number of laboratory animals needed to identify difficult-to-detect viruses in tissue, Besch-Williford says. The standard practice in

Residents spend at least three years in the program, attending graduate courses, conducting research and completing on-the-job training duties.



IAN SIGHTS PHOTO

Sherri Motzel, DVM '86, has plated out a DNA library and looks for suitable proteins to clone.

research is to take diseased tissue, such as a cancerous growth, from an animal or human and place it under the skin of a disease-free animal, she says. Researchers then watch the animal for a response.

"We're trying to take the animal part out of it and actually run that tissue through a series of tests to see if we can detect the virus," Besch-Williford says.

This technique has already worked with a mouse parvo virus, she adds.

"We feel very encouraged that we now have a way to take small

amounts of tissue to find the infection without putting it in an animal.”

Research such as this provides raw data to other researchers, she says, and can serve as a springboard for further studies. She adds that the main purpose of RADIL, however, has always been to focus on capturing and defining syndromes as a service to the larger research community.

“Because of that service activity we will always have a major thrust in teaching and training,” Besch-Williford says.

Once residents have completed their training at RADIL, Wagner says they spend a third six-month period with an established investigator, conducting research with the goal of contributing new knowledge to the field. He says they are expected to write an article or paper based on their research.

During the final 18 months of the program, the residents divide their time between research required to receive a master's degree in laboratory animal medicine, and residency activities. They either work at University Hospital with clinical colonies of animals or spend their residency time at the College, doing diagnostic work.

Lizabeth Terril, who received her DVM from Oklahoma State in 1988, has spent the final phase of the program conducting research on the peripheral nervous system of zinc-deficient guinea pigs. She plans to write a paper for publication based on her findings, and hopes that her research can eventually contribute to a better understanding of changes in the peripheral nervous system associated with diabetes.

“What I had originally tried to do was develop an animal model for diabetes,” she says. “There's no good model for studying the diabetic neuropathy. Anything we can find that would be similar helps.”

She adds that it's common for diabetics to develop peripheral neuropathy, which also occurs in the zinc-deficient guinea pigs.

While some students pursue an MS in laboratory animal medicine, others choose to spend two additional years in the program to receive a PhD in veterinary pathology. **Sherri Motzel**, DVM '86, is currently completing research for her doctorate. Her dissertation focuses on Tyzzer's bacillus, an agent that causes disease of the liver and intestines that is fairly common



IAN SIGHTS PHOTO

among many laboratory animal species, as well as horses, dogs and cats.

“We are just hitting the tip of the iceberg on this organism,” she says of Tyzzer's bacillus, adding that she'd like to continue her investigations after she receives her degree.

Since the program began 25 years ago, about 50 students have completed the training, Wagner says. Graduates may go on to positions with medical research universities such as the University of Texas or the Southwest Foundation for Medical Research, or pharmaceutical companies such as the Upjohn Co. or Mobay Corp. Graduates also work in research institutions such as Battelle, or government laboratories, such as National Institutes of Health in Bethesda, Md.

While these settings may vary, all graduates share the same focus: maintaining the health and welfare of animals used in human health-related research and testing, Wagner says.

Of the program, Wagner says: “It's a unique specialty in veterinary medicine in that it's identified closely with human medicine and well-being.” □

Greg Purdy is a research specialist with 10 years experience in the diagnostic laboratory as a virology technician. He is examining viral antigens in serologic tests.

She works in a setting that seems like paradise, travels frequently and describes her patients as "incredible, intriguing and magical." In fact, the career of **Dr. Rae Stone, DVM '80**, sounds like an impossible dream for the rest of us.

Stone is co-owner of Dolphin Quest, a marine mammal habitat at the Hyatt Regency resort complex in Waikoloa, on the main island of Hawaii. She and her partner, Dr. Jay Sweeney, began Dolphin Quest almost three years ago, because they wanted to create a near-natural setting where they could study dolphins. Although Stone lives in Arizona, she travels to Hawaii every other month to visit the six bottlenosed dolphins that live in Dolphin Quest's waters.

"My husband calls it my desert dolphin practice," Stone laughs, adding that she also does clinical consulting on an "as-needed" basis for a variety of zoological parks and oceanariums on the mainland.

Stone, who grew up riding horses and owned a small-animal practice for two years, says she never imagined she'd work with dolphins. The gradual shift in her career occurred when she decided to follow her dreams, she says.

It all began in 1981, when Stone did consulting work for a South Dakota park that was wintering its marine mammals in Arizona.

"They were there less than a year — just enough to turn my life upside down!" Stone recalls.

She asked the owners of the animals to send her to Marineland in Palos Verde, Calif., to learn more about marine mammals. She worked for five years at the marine park, doing postgraduate research and consulting, and serving as a back-up vet on the staff.

In 1982, she started developing techniques for the use of diagnostic ultrasound on marine mammals. Her husband, **Kent Allen, DVM '79**, who owns and operates an equine referral service in Arizona, had done some of the original ultrasound work with horses. Stone was able to take his equipment to California for her

research.

Stone used diagnostic ultrasound for reproductive studies in marine mammals and to image the surface of the lung for abscesses or pneumonia, and wrote a chapter based on her research for the *Clinical Handbook of Marine Animal Medicine*, published by the Sierra Sea Press.

When Marineland closed in 1987, Stone was hooked on marine mammals. She'd hired someone to help out at her practice in Arizona and spent six months shuttling back and forth to California where she continued her consulting work. She also gave presentations based on her research at international meetings, lectured in Europe on the uses of diagnostic ultrasound and did some consulting work in Finland and Texas.

Finally, with Allen's encouragement, she sold her small-animal practice to work exclusively with marine mammals, a decision she does not regret.

"As much as I enjoyed small animal practice, I'd have a hard time going back to it," Stone admits.

Other, more tantalizing opportunities awaited. On the way to examine a sick walrus one day, she and Sweeney, who worked as a staff vet at Marineland, discussed their personal views on how dolphins and other marine mammals should be maintained, and how marine mammal facilities should be designed. Stone says that, as a consultant, her input was always limited to the clinical health care of the animal.

"There are a lot of other ways I felt we could have a positive impact on the animal's care," she says.

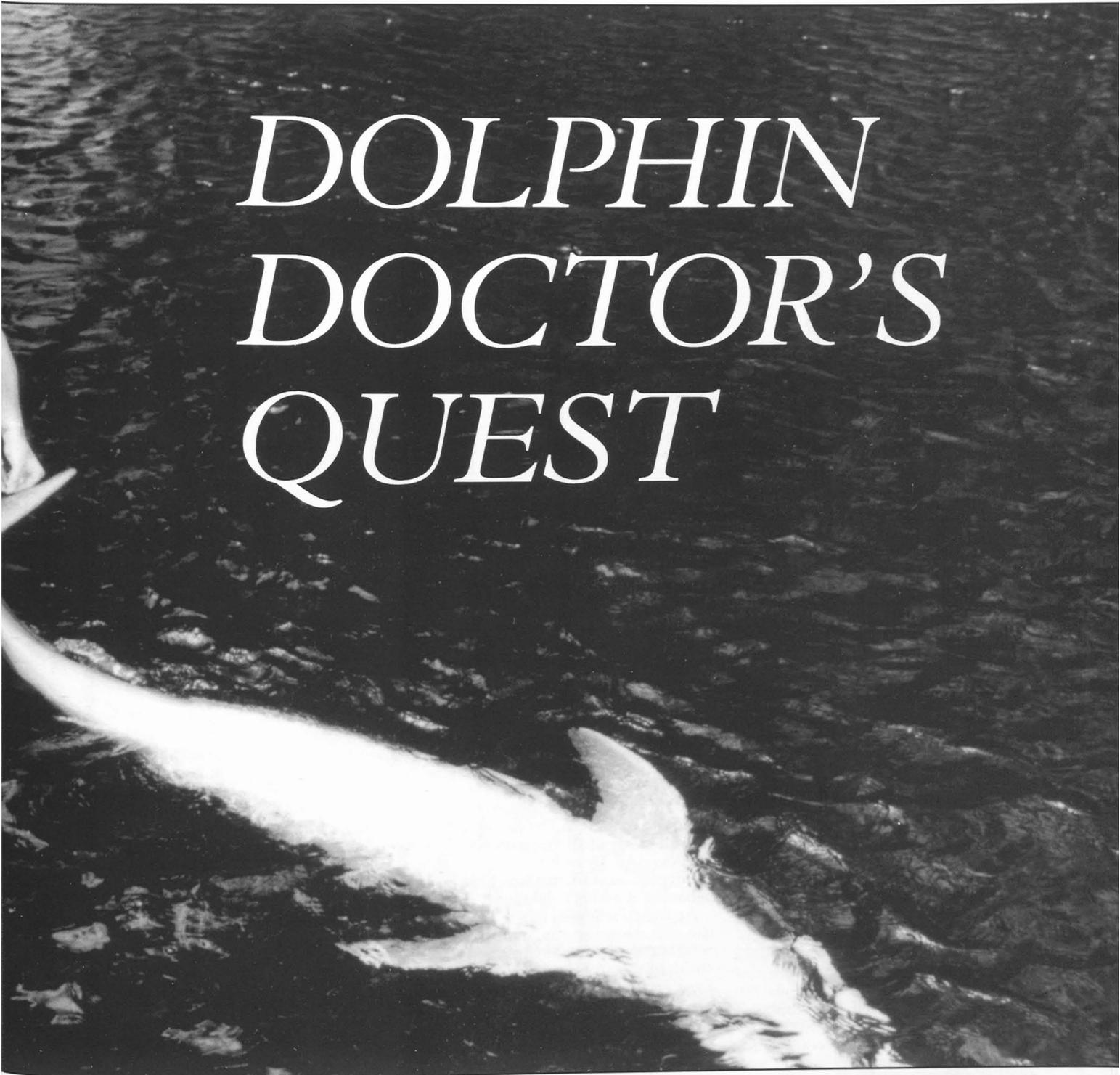
And so the idea of Dolphin Quest emerged, unfolded and eventually became reality. Stone says that, as vets, she and Sweeney lacked the capital to build the facility they envisioned, so they took their plans to the Hyatt Organization, which operates the coastal resort in Waikoloa, and explained their vision of a facility for research and public education. Executives at Hyatt liked the idea.



DOLPHIN QUEST PRODUCTIONS

Dr. Rae Stone's patients enjoy the benefits of modern preventive medicine. Here, Lono the dolphin voluntarily offers his fluke to Dr. Stone for blood sampling while trainer Kim Hill assists.

DOLPHIN DOCTOR'S QUEST



"They're committed to what we want to do from an environmental and educational standpoint," Stone says. "It's been very much a cooperative effort."

With the financial backing of Hyatt, Stone and Sweeney developed the facility's design, supervised its construction and opened Dolphin Quest officially in September 1988.

The six dolphins at the facility live in a 2-million-gallon natural lagoon. The 150-foot by 250-foot lagoon is equipped with a well system that pumps in almost 10,000 gallons of water a minute. In some

optimism."

Stone's son, Austin, 2, has grown up with dolphins. Stone says Austin's been her traveling companion since he was 5 weeks old, riding along in her backpack when she went on consulting calls in Florida, Texas, Hawaii and California. He first swam with a dolphin when he was 8 months old, and has watched his mother take blood samples from marine mammals. In fact, Stone tells the story of how Austin once assisted at an exam.

"He was watching, and he went over to the the vet box, got out a syringe, and brought it to me."

Stone says it's important to her and her husband that Austin grow up loving animals. She adds that she'd like to see all children, whom she calls the environmentalists of tomorrow, grow up learning to respect and protect animals.

Providing a chance for children and adults to interact with dolphins and learn about them upclose is only one of the goals of Dolphin Quest. Stone says research also is an important priority at the facility. Two years ago, she and Sweeney, with the help of the Hyatt Organization, created the Waikoloa Marine Life Fund, a non-profit foundation whose purpose is to raise financial support for marine education, conservation and research, Stone says. Dolphin Quest generates more than \$100,000 a year for the fund, which also receives individual and corporate support. Stone is chief executive officer of the foundation.

The fund currently supports five marine projects in the waters around Hawaii, Stone says. These projects include the development of a marine life preserve on Kuai for the monk seal, Hawaii's most endangered marine mammal; a University of Hawaii study of the humpback whale; and a University of California-Santa Cruz study of the behavior of spinner dolphins.

At Dolphin Quest, Stone says she and other veterinarians conduct regular medical exams of the dolphins, taking blood, urine, fecal and blow-hole samples which are then sent to researchers around the world. The dolphins are cooperative, she says, adding that she and the other vets have conditioned the animals to assist in

their own examinations. The dolphins will voluntarily place their tails in a vet's hands for a blood sample to be drawn, for example.

Although some groups are critical of keeping dolphins and other marine mammals in captivity, Stone stresses the importance of learning more about marine life.

"Only by close study can we answer certain questions about the immune system and anatomy to make intelligent decisions about long-term survival in the wild," she says.

Stone adds that captivity does not have to mean misery for the animals, and emphasizes that those who work with marine mammals in captivity bear a weighty responsibility.

"From my experience in working with dolphins in the last 10 years, I think that any time we bring an animal out of the wild, we have the responsibility to provide that animal with the very best in habitat and health care," she says. "We have a second responsibility: to let that animal function as an ambassador for its species."

If these two responsibilities are met, she says, the animals will enjoy a long, stimulating and fulfilling life, and the public will learn a valuable lesson about protecting animals in the wild.

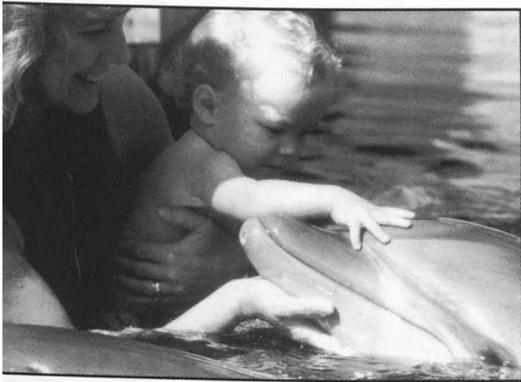
These ideas have guided Dolphin Quest from the start, and will continue to shape the future of the facility and of the foundation. In the realm of public education, Stone says she plans to build a museum-science center in Hawaii and wants to dedicate time to expanding the Waikoloa Marine Life Fund.

"I think it has the potential to be a recognized force in the world for marine life preservation," she says.

In terms of her own research, she'd like to work on the development of fetal growth charts for the bottle-nosed dolphin, based on her findings with diagnostic ultrasound.

Stone says she loves her work because there is no such thing as a routine day in marine mammal medicine.

"I have been very fortunate in being able to work with such unique and fascinating animals, develop other areas of marine mammal management and husbandry, and to have the opportunity to work with children and hopefully impact their development." □



SHEREE LIPTON PHOTO

Stone introduces her son, Austin, to a new friend at Dolphin Quest.

spots, the lagoon reaches a depth of 22 feet. According to Stone, the water is so clear, you can see from end to end underwater.

Stone says the lagoon is as close to a natural setting as possible. There are tides, rocks, sands, vegetation and other features of the dolphin's natural habitat. Thirteen people staff Dolphin Quest: six trainers work full-time, and a local veterinarian keeps tabs on the dolphins' health.

Dolphin Quest is open to the public for tours, and Stone says special programs are held for local schools. She says she is pleased that Dolphin Quest serves as a place where people can learn about protecting the whole web of marine life.

"We've been able to develop a new standard for captive marine habitats and some incredibly successful educational programs for children and adults," Stone says.

She adds that one of the most rewarding aspects of the project is seeing the dolphins and children together.

"They seem to feed off one another's energy, enthusiasm and



IAN SIGHTS PHOTO

Dr. Nat Messer and assistants at the Equine Center use the Yag laser, in conjunction with an endoscope, to destroy a blood blister-like growth in a horse's nasal passage.

The Cutting Edge...

LASER SURGERY AT THE COLLEGE

by Marinell Landa

When it comes to laser surgery in animal practice, the College is on the cutting edge among veterinary schools and colleges in the country.

Dr. John Payne, assistant professor of medicine and surgery, calls laser surgery a new frontier in veterinary medicine. Payne says MU is one of a handful of universities using lasers on animal patients.

"We're using lasers based on our own experiences and what we know about human surgery," says Payne, who received training at the University of Cincinnati. "Veterinary medicine tends to lag behind human medicine in the high-

tech areas."

The College, which purchased a \$25,000 CO₂ laser in 1990 belongs to a consortium of eight veterinary schools and the Beckman Laser Institute in Irvine, Calif. The consortium has begun a cooperative project on applications of laser surgery in veterinary medicine. Payne has written a grant to do

further research into tissue welding, an innovative aspect of laser surgery. Tissue welding eliminates the need for sutures, decreases the rate of infection at an incision and allows the patient to heal faster, Payne says.

His work with lasers at the College has not been confined to research alone. He has used the laser on two or three dogs who were patients at the small-animal clinic. Those cases involved perianal fistulas, infections that occur around the anus of German Shepherds and Irish Setters in particular. Before lasers were used in such cases, Payne says the entire infected area would be removed, leaving the dog incontinent. Often the infection would recur.

The laser allows the surgeon to cut in a much more precise manner, he says. Infected tissue is removed while the laser simultaneously seals off blood vessels, preventing a hemorrhage.

The use of lasers to cut tissue, much like a hi-tech scalpel, or to vaporize tumors, are two standard applications.

"They just literally go up in smoke," Payne says of the tumors.

This feature makes lasers especially popular in cancer surgery, he adds. A surgeon can remove tumors without touching them and possibly causing them to spread. The laser also allows access to tumors in difficult areas, such as the mouth and throat.

The ability of the laser to destroy tumors and limit blood loss have made it a popular procedure in equine medicine during the past five years, says Dr. Nat Messer, director of the Equine Center at Middlebush Farm.

The center purchased a \$60,000 "Yag" (neodymium yttrium) laser about a year ago. It's been used in fewer than 10 cases involving horses, Messer says.

We really want to do the research before we actually do clinical cases," he says, adding that the center is currently conducting a study of laser applications in upper respiratory tract surgery in horses.

The study involves using the laser to perform a ventriculectomy, a

procedure in which the ventricle of the larynx is removed in order to treat another condition called laryngeal hemiplegia, which hampers breathing. Laryngeal hemiplegia presents a serious problem for race horses.

Before the advent of the laser, Messer says, a horse would be anesthetized while the surgeon opened the larynx and removed the ventricle. The laser permits a less invasive surgery that can be performed without anesthesia.

After the horse is given a tranquilizer, the laser light is used to burn and destroy the unwanted tissue, Messer says. He adds that the laser at the Equine Center is used primarily in conjunction with an endoscope. The endoscope is inserted into the area to be operated on, such as the nasal passage or the uterus, for example, and allows the surgeon to actually see the laser while using it.

Messer prefers using the laser in the case of a ventriculectomy because it results in bloodless surgery.

"We actually go in there and burn the lining of the ventricle. When it heals, there's no more ventricle left," he says. "The scar tissue helps correct the problem of the hemiplegia."

Messer adds that the laser at the center also has been used to remove skin tumors, treat uterine cysts in a mare and correct an ethmoid hematoma, a blood blister-like growth in the nasal passage.

"We're mainly using our laser as a tool to destroy abnormal tissue," Messer says, adding that the technique is so new that other applications haven't been explored yet.

He says the center hopes to use lasers in articular, or joint, surgery and in surgery involving the peripheral nerves. Other types of surgery would require different lasers, he adds.

At both the small-animal clinic and the Equine Center, student involvement in cases has been limited. Payne says students assist in cases at the clinic but do not perform the surgery itself.

"The cases that are referred here are extremely difficult, beyond the ability of the students," Payne says.

Messer says students at the Equine Center participate in surgery from an observer standpoint, watching the procedure on television monitors.

Although lasers have made the job easier in many cases, there are disadvantages. The cost of the equipment is a drawback, Messer says, adding that the necessary safety precautions can present some inconveniences. At the Equine Center, part of the clinic has to be closed down when the laser is in use to prevent people from being casually exposed, he says.

Another drawback is the laser machine's size.

There's no way to go out to the stable and work with it," Messer says of the Center's laser, which weighs a hefty 1,200 pounds.

Payne says the CO₂ laser also has its unique limitations and idiosyncracies. Laser equipment varies in terms of power output and focus, and it takes time to adjust to the machine. The small-animal clinic's laser is limited in terms of its uses, Payne says, because the laser beam cannot penetrate water. This precludes using the CO₂ laser in eye surgery cases, for example, because the tear film blocks the beam, he says.

Despite such drawbacks, laser surgery definitely has a future at the College. Payne and Messer look forward to expanding the applications of lasers. When the new teaching hospital is completed in 1992, equine surgery will be performed there, allowing access to the CO₂ laser, Messer says. He adds that he plans to explore possible uses of that laser in surgery on horses.

Payne says he looks forward to coupling the laser with fiber optic equipment such as scopes, in much the same way the Equine Center uses its Yag laser in conjunction with the endoscope. This technique would make the laser more versatile.

"For instance, if you had a little tumor down the bronchus [breathing tube], you'd run the bronchoscope down, run a beam through it, and vaporize the tumor without making an incision," he says.

With so many new applications to explore, it seems that lasers, which Payne calls a technology of the '80s, will play an important role in the surgery of the '90s at the College. □



At the small-animal clinic, surgeons use the CO₂ laser to remove tumors while simultaneously sealing off blood vessels to prevent a hemorrhage.

AROUND THE COLLEGE

Biomedical Sciences

Dr. Gheroghe Constantinescu, associate professor, published "The Anatomy of Embryology of Portosystemic Shunts in Dogs and Cats" with **John T. Payne**, assistant professor in the department of Medicine and Surgery, and Robert A. Martin. The article appeared in *Seminars in Veterinary Medicine and Surgery (Small Animal)*, W.B. Saunders Co., Vol. 5, No. 2, 76-82, May, 1990.

Dr. Wade V. Welshons, assistant professor, published "A sensitive bioassay for detection of dietary estrogens in animal feeds" with G.E. Rottinghaus, D.J. Nonneman, M. Dolan-Timpe and P.F. Ross in the *Journal of Veterinary Diagnostic Investigation*, Vol. 2, 268-273. In August he received \$484,857 from the National Institutes of Health for "Regulation of steroid receptor turnover in cancer cells." He is the principal investigator. In September he received \$150,000 from the NSF for "Aging of the male reproductive system." He is co-investigator on this project. The principal investigator is F.S. vom Saal. **Susan Novinger** joined the department as administrative associate in January.

Dr. Tom Shannon, postdoctoral fellow, received a two-year fellowship from the Pharmaceutical Manufacturers Association to study the role of the vasoactive peptide endothelin on cardiac function.

Dr. Vincent St. Omer, professor, is on an extended leave from the University and serves as director for the School of Veterinary Medicine at the Eric Williams Medical Sciences Complex, University of the West Indies, St. Augustine, Trinidad. St. Omer was associate professor of veterinary pharmacology at MU from 1974-84, and from 1976-79, director of graduate studies in the department.

Diagnostic Laboratory

Dr. Carol W. Maddox, assistant

professor, received a \$4,000 grant in January from the Missouri Pork Producers Association for "Characterization of *S. cholerae-suis* Virulence Genes and Purification of Gene Products with Potential Use as Immunogens Preventing Adherence and Invasion." **Cynthia Besch-Wilford**, director of the Research Animal Diagnostic and Investigative Laboratory, is co-investigator. **Dr. George E. Rottinghaus**, associate professor, published "Growth, morphological, and chemical component responses of tall fescue to *Acremonium coenophialum*" with N.S. Hill, W.C. Stringer, D.P. Belesky, W.A. Parrott and D.D. Pope in *Crop Science*, Vol. 30, 156-161, 1990. He also published "Hepatic copper concentrations in purebred and mixed-breed dogs" with L.P. Thornburg, M. McGowen, K. Kupka, S. Crawford and S. Forbes in *Veterinary Pathology*, Vol. 27, 81-88, 1990. He published "Cutaneous ulceration and necrosis in pigs fed aflatoxin and T-2 toxin-contaminated diets" with R.B. Harvey, L.F. Kubena, D.E. Corrier and W.E. Huff in the *Journal of Veterinary Diagnostic Investigation*, Vol. 2, 227-229, 1990. With L.F. Kubena, R.B. Harvey, W.E. Huff, D.E. Corrier and T.D. Phillips, he published "Efficacy of a hydrated sodium calcium aluminosilicate to reduce the toxicity of aflatoxin and T-2 toxin" in *Poultry Science*, Vol. 69, 1078-1086, 1990. With W.V. Welshons, D.N. Nonneman, M. Dolan-Timpe and P.F. Ross, he published "A sensitive bioassay for the detection of dietary estrogens in animal feeds" in the *Journal of Veterinary Diagnostic Investigation*, Vol. 2, 268-273, 1990.

He published "Liquid chromatographic determination of ergovaline in endophyte-infested tall fescue" with G.B. Garner and C.N. Cornell in *Proceedings of the International Symposium on Acremonium/Grass Interactions*, edited by S.S. Quisenberry and R.E. Joost and published by Louisiana Agricultural Experiment Station ISSN #1052-5181, Baton Rouge, La., p. 93-96, New Orleans, Nov. 5-7, 1990. He published "A method for large scale isolation of ergovaline from endophyte-infested tall fescue seed (*Festuca arundinacea*)" with H.

Testereci, G.B. Gardner, C.N. Cornell and M.P. Anderson in the same publication.

With R.B. Harvey, L.F. Kubena, W.E. Huff, D.E. Corrier and T.D. Phillips, he published "Effects of treatment of growing swine with aflatoxin and T-2 toxin" in the *American Journal of Veterinary Research*, Vol. 51, 1688-1693, 1990.

Medicine and Surgery

Dr. William Braun, associate professor, spoke at the Sixth Annual Avian/Exotics Animal Medicine Symposium in Davis, Calif., Jan. 18-20, 1991.

Dr. C.B. Chastain, professor, published "Hair coat markers of associated genetic defects" with E.J. Fleming in *Consultations in Feline Internal Medicine*, J.R. August, editor. Published by W.B. Saunders, Philadelphia, Chapter 15, 1990. Chastain also published "Canine Pseudohypothyroidism and Covert Hypothyroidism" in *Problems in Veterinary Medicine*, Vol. 2, No. 4, 693-716, 1990.

He received a Faculty Instructional Development Grant for \$700 from the Mizzou Alumni Fund for his proposal to develop a newsletter to augment veterinary instruction.

Dr. B. Keith Collins, assistant professor and co-principal investigator on "Detection of Carriers of Heritable Canine Cataracts with Genotypic Markers" with Gary S. Johnson and co-investigators Linda L. Collier, **Cecil P. Moore**, associate professor, Lela K. Riley and Bimal Ray, received a grant from the American Kennel Club.

Dr. Ross Cowart, assistant professor, has become board certified in the American Board of Veterinary Practitioners.

Jeannette M.A. da Silva Curiel, an ophthalmology resident now in Canada, published "Nutritionally Variant Streptococci Associated With Corneal Ulcers in Horses: 35 Cases (1982-1988)" with Christopher J. Murphy, Spencer S. Jange and Roy W. Bellhorn in the *Journal of the American Veterinary Medical*

Association, Vol. 197, No. 5, Sept. 1, 1990.

Dr. Brent Jones, associate professor, published "Gastrointestinal Endoscopy of the Dog and Cat" with W.G. Guilford in *Veterinary Medicine Report*, Vol. 2, 140-150, 1990. He also published "Choosing an Endoscope, Financial and Practical Considerations" in *Veterinary Medicine Report*, Vol. 2, 175-178, 1990. In the same volume he published "Liver Biopsy, The Laparoscopic Approach," pages 193-196. He was guest editor of *Veterinary Endoscopy, Veterinary Clinics of North America: Small Animal Practice*, September 1990. He presented eight papers to the Eastern States Veterinary Conference in Orlando, Fla., Jan. 12-15, 1991.

Dr. Kevin Keegan, assistant professor in equine surgery, holds a temporary one-year appointment which began August 15, 1990. The College is recruiting for this position.

Dr. Nat T. Messer, director of the Equine Center, has become board certified in the American Board of Veterinary Practitioners.

Dr. Laurie Mills Wallace, assistant professor, has become board certified in the American Board of Veterinary Practitioners and has published "Coliform Myositis in a Calf" with Bennett Fagin, Donald Schmidt and W.H. Fales in the *Journal of the American Veterinary Medical Association*, Vol. 197, No. 11, Dec. 1, 1990. She also has published, with Guy Bouchard, Wendy Nicholson, James Turk and Craig L. Sweeney, "Polypoid Cystitis, Pyelonephritis and Obstructive Uropathy in a Cow" in the *Journal of the American Veterinary Medical Association*, Vol. 197, No. 9, Nov. 1, 1990.

Dr. Clifton Murphy, professor and director of the Reproductive Laboratory, has published, with C.E. Farin, K. Imakawa, T.R. Hansen, J.J. McDonnell, P.W. Farin and R.M. Roberts, "Expression of Trophoblastic Interferon Genes in Sheep and Cattle" in *Biology of Reproduction*, Vol. 43, 210-218, 1990. Dr. Murphy visited Belgrada, Yugoslavia, Oct. 27-Nov. 6, to implant embryos for the Maplehurst Embryo Transfer Company. He traveled to Belgrada again Dec. 15-22 to assist in an embryo transfer project funded by the USDA in cooperation with Maplehurst Embryo Transfer Company. He attended the International Embryo Transfer Society meeting in

Bournemouth and Cambridge, England, Jan. 9-17, 1991.

Dr. John T. Payne, assistant professor, published with Robert A. Martin and Gheroghe Constantinescu, associate professor of veterinary biomedical sciences at MU, "The Anatomy of Embryology of Portosystemic Shunts in Dogs and Cats" in *Seminars in Veterinary Medicine and Surgery (Small Animal)*, W.B. Saunders Co., Vol. 5, No. 2, 76-82, May, 1990. He also published "Abductor Muscle Prosthesis for Correction of Laryngeal Paralysis in Ten Dogs and One Cat" with Robert A. Martin and Dale L. Rigg in *Journal of the American Animal Hospital Association*, Vol. 26, 599-604

November/December, 1990.

Dr. Robert S. Youngquist, professor, published with P.W. Farin, J.R. Parfet and H.A. Garverick "Diagnosis of Luteal and Follicular Ovarian Cysts in Dairy Cows by Sector Scan Ultrasonography" in *Theriogenology*, Vol. 34, No. 4, October, 1990.

The Department is pleased to have received a donation of approximately \$150,000 worth of Santa Gertrudis cattle from Leonard and Doris O'Brien of the Cloverleaf Farm in Foristell, Mo. The herd will be used for embryo transfer, theriogenology and food animal instruction and research. (continued on page 16)

Nothing was lost in textbook translations

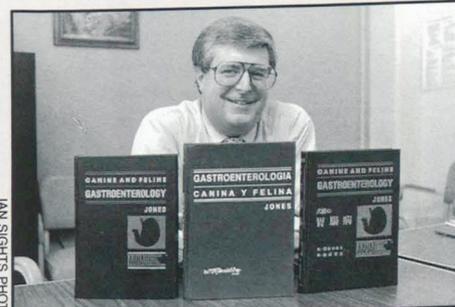
For **Dr. Brent Jones**, associate professor of internal medicine, the summer of 1990 was one of accomplishment and adventure. The Japanese and Spanish translations of a textbook he edited, *Canine and Feline Gastroenterology*, were released at about the same time. The textbook, which was published by W.B. Saunders in 1986 and for which Jones also wrote two chapters, is his first publication to be translated.

To promote the Japanese edition, the publisher invited Jones to lecture veterinarians on gastroenterology. He spent three weeks in Japan, meeting veterinarians, sharing information and sampling the cuisine.

"It's different," he admits, adding that, as a specialist in gastroenterology, he especially had reservations about the raw fish, some of which is served alive. "They told me there are some parasites you can pick up from raw fish, and they said, 'Don't worry, it's very treatable!'"

Jones says his textbook was well-received in Japan and sold close to 800 copies immediately after its release. He characterizes Japanese veterinarians as extremely aggressive about learning new techniques and methods.

"Some of the basic information I gave them was new to them," Jones says. He adds that, because there has not been as much emphasis on



Associate Professor Brent Jones

veterinary medicine in Japan as in America, the Japanese veterinarians do not possess the same level of competence as American practitioners, who draw upon a broader base of knowledge.

"But with their enthusiasm for learning," he says of the Japanese veterinarians, "they'll gain that competence in a short time."

Jones, who has taught at the College for 15 years, also has traveled and lectured in Italy, Sweden, Australia and England. He has been invited to lecture in Austria and Belgium in October. As a member of the program committee for the meeting of the World Small Animal Veterinary Medical Association, he'll also travel to Rome in 1992.

Until his next trip abroad, Jones is hard at work on a textbook about endoscopy, which will be published by W.B. Saunders in 1992.

(continued from page 15)

Microbiology

Hans K. Adldinger, professor, presented "Derivation of 7SL/Alur sequences present in the Epstein-Barr Virus Genome," at the German Cancer Research Center, Heidelberg, Germany, Nov. 21-23, 1990, and at the Institute for Clinical Molecular Biology and Cancer Genetics in Munich, Germany, Nov. 26-28, 1990. He presented "Epstein-Barr virus gene expression during latent infection of human B-lymphocytes" at the Department of Molecular Microbiology and Immunology, MU School of Medicine, on Aug. 21, 1990.

Dr. Gary K. Allen, assistant professor, gave a presentation on NC107 Bovine Respiratory Disease Sept. 9-12, 1990 at Pingree Park, Colo., and at Fort Collins, Colo. He attended the Conference of Research Workers in Animal Diseases in

Chicago Nov. 4-6, 1990. He has received an MU College of Veterinary Medicine Instructional Computer grant, an MU College of Veterinary Medicine Committee on Research grant, a commercial gift from the Animal Health Research Foundation, and a grant from USDA Formula Funds. He published, with **B.D. Rosenquist**, "Effect of bovine fibroblast interferon on rhinovirus infection in calves" in the *American Journal of Veterinary Research*, Vol. 51, 870-873, 1990.

Dr. John N. Berg, professor, attended the Conference on Antimicrobial Agents and Chemotherapy in Atlanta, Oct. 20-25, 1990. He attended the Conference of Research Workers in Animal Disease in Chicago Nov. 3-6, 1990, and the Food Rot Project in Portland, Ore., Sept. 27-Oct. 1, 1990.

Dr. Donald C. Blenden, professor, retired June 30, 1990, after more than 30 years of service at MU.

Dr. Gerald M. Buening, professor,

attended the Conference of Research Workers in Animal Diseases in Chicago, Nov. 4-6, 1990. He received a grant from the USDA Formula Funds. He published, with J.V. Figueroa, D.A. Kinden and **Theodore J. Green**, "Identification of common surface antigens among *Babesia bigemina* isolates by using monoclonal antibodies" in *Parasitology*, Vol. 100, 161-175, 1990. He published "Development of a recombinant *Anaplasma marginale* DNA probe" with R. Aboytes-Torres in *Veterinary Microbiology*, Vol. 24, 391-408, 1990. He published "Characterization of a repetitive DNA probe for *Babesia bigemina*" with A. Barbet, P. Myler, S. Mahan, V. Nene and T.C. McGuire in *Veterinary Parasitology*, Vol. 36, 11-20, 1990. With J.V. Figueroa, D.A. Kinden and T.J. Green, he published "Identification of common surface antigens among *Babesia bigemina* isolates by using monoclonal antibodies" in

Microbiology professor enjoys active retirement

Retirement for **Dr. Donald Blenden**, who taught for 33 years in the department of veterinary microbiology, has meant time to travel, pursue various hobbies and still remain fairly active in the profession.

Blenden still serves as director, although on an interim basis, for the World Health Organization Collaborating Center for Training and Reference in Enteric Zoonoses. He says his role has evolved into that of an adviser to projects aimed at controlling diseases that can be passed from animals to humans and cause severe diarrhea.

He also is actively involved in a project between the College and the USDA.

Blenden, who received his DVM from MU in 1956, regards his work in the area of public health as one of his most significant contributions. He says he believes that veterinary medicine has a distinct service obligation to the community.

"Maintaining the veterinarian's role in the multidisciplinary area of public health is something I've tried to adhere to," he says. "I think it builds a healthier respect for what veterinarians can do. It kind of gets away from the old horse-doctor

image."

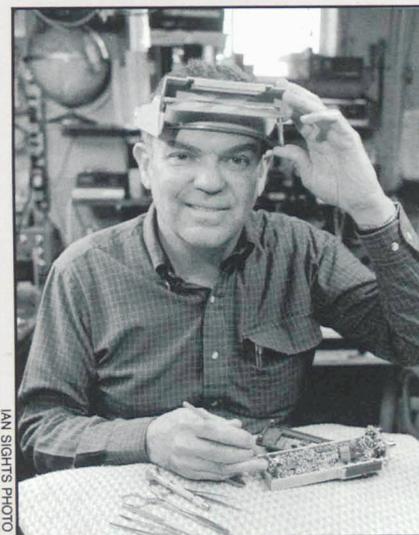
He adds that, throughout his career, he's attempted to place veterinary medicine into the human health arena.

"I very rigidly hold to the idea that community health problem solvers need veterinary input, because otherwise, veterinary-related problems are not recognized."

Blenden is pleased with the contributions he has made as a veterinarian to human health, and recalls in particular his work during the statewide rabies outbreak in 1979. He remembers working from 6 a.m. until midnight, seven days a week, he says, doing animal bite assessment and recommendations by the dozens.

"There were about four years there that I just wouldn't want to repeat, because it was incredibly demanding," he says.

Research into rabies has been a constant theme in Blenden's career. Of his approximately 145 scientific and service publications, he considers his writing in the field of rabies to be his most valuable. His publications range from articles published in scholarly journals such as the *Journal of the American*



IAN SIGHTS PHOTO

Blenden, an amateur radio operator, likes to spend his free time repairing radio equipment.

Veterinary Medical Association, to articles for popular journals, such as the *American Kennel Club Gazette*.

"I tried to achieve a balanced mix of hard-core research and transmitting readily applicable and

Parasitology, Vol. 100, 161-175, 1990.

Dr. C. Andrew Carson, chairman and professor, traveled to Brazil, Uruguay, Ecuador, Paraguay and Argentina as a consultant for the Mid-America International Agricultural Consortium representing Iowa State, Kansas State, Nebraska, Oklahoma State and MU, June 16-27, 1990. He visited the Organization for Tropical Studies and the regional office of the United States Aid to International Development, San Jose, Costa Rica, April 21-28, 1990. Other activities include negotiating details of the embryo transfer program with **Dr. Clifton Murphy** and the directors of Centro agronómico tropical de investigación y enseñanza; meeting with CATIE staff on graduate training and hemotropic disease research in his own and **Dr. Buening's** laboratories, consulting with the staff at EARTH School and the National University College of Veterinary Medicine, and exploring

a request for agricultural development assistance in Panama. He also attended the annual meeting of the Missouri Veterinary Medical Association. He published "*Babesia bovis*: Evidence for Selection of Subpopulations During Attenuation" with P. Timms, A.P. Cowman and N.P. Stewart in the *Journal of Experimental Parasitology*, Vol. 70, 404-410, 1990. He published, with A. Ray, J. Quade and B.K. Ray, "Calcium-dependent protein phosphorylation in *Babesia bovis* and its role in growth regulation" in the *Journal of Parasitology*, Vol. 76, 153-161, 1990. **Dr. Robert M. Corwin**, professor, attended the Conference of Research Workers in Animal Diseases in Chicago, Nov. 3-7, 1990. He served as president of the conference. He submitted "Efficacy of nitroscanate as a cestocide against natural *Dipylidium caninum* infections in dogs" with S.P. Green to *Companion Animal Practice*.

Dr. Theodore J. Green, associate professor, attended the Conference of Research Workers in Animal Diseases, Nov. 3-7, 1990, in Chicago. He has received a grant from the USDA Formula Funds. His article, "Monoclonal IgM rheumatoid factors enhance the inhibitory effect of *Plasmodium falciparum*-specific monoclonal antibodies in vitro," written with M.K. Stuart, will appear in *Parasitology*. He published "Identification of common surface antigens among *Babesia bigemina* isolated by using monoclonal antibodies" with J.V. Figueroa, **Gerald Buening**, and D.A. Kinden in *Parasitology*, Vol 100, 161-175, 1990.

Dr. Bimal K. Ray, assistant professor, received a grant from the USDA Formula Funds and a grant from the UF/WSU/UM/SAID Fund. He attended the Conference of Research Workers in Animal Diseases Nov. 3-7, 1990. He submitted, with E. Krueger and **C. Andrew Carson**, "Growth Stimulation of *Babesia bovis* by acute phase reactant, α_1 -acid glycoprotein" to *Biochemical and Biophysical Research Communications*, in 1990. He also submitted "Effect of acute phase reactants on the *in vitro* growth of *Babesia bovis*" with A. Ray, A. Wilke and **C. Andrew Carson**, to *Parasitology* in 1990. He and J. Quade, A. Ray and **C. Andrew Carson** submitted "Calcium-dependent protein phosphorylation in *Babesia bigemina*" to *Parasitology* in 1990. He also submitted "Post-transcriptional regulation of the acute phase protein synthesis" to *Journal of Biological Chemistry* in 1990.

Dr. Bruce D. Rosenquist, professor, attended the Eastern States Veterinary Conference in Orlando, Fla., Jan. 8-18, 1990. He presented the Missouri Station report to the NC107 Committee on Bovine Respiratory Diseases in Fort Collins, Colo., Sept. 8-12, 1990. He attended the Conference of Research Workers in Animal Disease and the American College of Veterinary Microbiologists Continuing Education Program in Chicago, Nov. 3-7, 1990. He attended the Governor's Conference on Agriculture Dec. 9-10, 1990. He published, with G.K. Allen, "Effect of Bovine fibroblast interferon on rhinovirus infection in calves" in the *American Journal of Veterinary Research*, Vol. 51, 870-873, 1990.

(continued on page 18)

pre-existing information to the consuming public," Blenden says.

In addition to his work as a researcher, professor and director of the WHO Collaborating Center, Blenden served as director of Veterinary Medical Continuing Education and Extension from 1974-77 and as president-elect and president of the Missouri Public Health Association from 1968-70. He was vice chairman and chairman of the veterinary public health section of the American Public Health Association from 1971-73, and vice chairman of the Board of Health in Columbia from 1963-68.

An amateur radio operator for about 20 years, Blenden also has worked with the local weather service, providing communications assistance during emergencies. In 1978 he received a commendation from the state of Missouri for Service in Disaster Preparedness.

Nowadays, Blenden repairs and builds radio equipment as a hobby, and teaches an FCC radio licensing class through the Central Missouri Radio Association. One project he's enthusiastic about is his modification of hand-held radios for the newly organized volunteer fire department at Lake of the Ozarks,

where he owns a vacation home.

When he's not tinkering with radios, dabbling in photography or doing home repair and remodeling chores, Blenden turns his attention to writing. He plans to write a short book on long-distance, international travel based on his own experiences. He also wants to write a series of books for children on topics about nature and animals.

Travel in Missouri and elsewhere in the United States is a high priority now for Blenden. In fact, the first thing he and his wife, Patty, did when his retirement became official last July was to drive to Alaska to visit their son and his family.

"The scenery is just out of this world," Blenden says, adding that it took almost three weeks to reach Alaska.

Retirement is not without its disadvantages, Blenden notes. He says he misses the frequent contact with people in many different disciplines, but adds that he plans to maintain as many contacts as he can. He's looking forward to working with the WHO Collaborating Center on its project in the Caribbean region to develop a molecular approach to diagnosis and control of human diarrheal diseases.

Dr. James G. Thorne, associate professor, conducted the annual meeting of NC197, "Research in Support of a National Eradication Program for Pseudorabies" in Urbana, Ill., Sept. 18-20, 1990. He attended the National Board Examination Review Panel Meeting in New York City, Oct. 5-7, 1990. He attended the Conference of Research Workers in Animal Diseases in Chicago, Nov. 3-6, 1990. He also attended Symposium '90 in Veterinary Epidemiology, Zoonoses and Economics in Landover, Md., Nov. 12-15, 1990. He received a grant from the MU's College of Veterinary Medicine Committee on Research.

Visitors to the department:

Dr. Ibrahim Kakoma of the University of Illinois visited Aug. 24, 1990.

Dr. C.Y. Chilapa, chairman of parasitology, **Dr. Richard Hanson**, an immunochemist, and **Dr. P.P. Sharma**, professor of parasitology, all of the University of Illinois, visited Aug. 28, 1990.

Dr. Jose Calzada of the Centro Agronomico Tropical de Investigacion y Enseñanza, Turrialba, Costa Rica, visited from Nov., 1990 to March, 1991.

Pathology

Dr. Cynthia Besch-Williford, assistant professor, is co-investigator on a grant from the Missouri Pork Producers titled "Protective Potential of an Immunogen Derived from *Salmonella cholera-suis* Virulence Gene(s)." She was sponsor for Dr. Diane Wade on an individual grant awarded by the NIH titled "CAR *Bacillus* Infections in Laboratory Animals." She published "Use of Cyclophosphamide in Diagnostic Provocation of Tyzzer's Disease in Hamsters" with G.P. Boivin and J.E. Wagner in *Laboratory Animal Science*, Vol. 40, No. 5, 545, 1990. She published "Zinc deficiency and peripheral neuropathy in chicks" with B.L. O'Dell, J. Conley-Harrison, J.D. Browning, J.M. Hempe and J.E. Savage in *Proceedings of the Society for Experimental Biological Medicine*, Vol. 1994, 1-4, 1990. She published "Zinc status and peripheral nerve function in guinea pigs" with B.L. O'Dell, J. Conley-Harrison, J. Browning and D. O'Brien in *FASEB Journal*, Vol. 4, 2929-2933, 1990. With **Lela Riley**

and **K. Waggle** she published "Protein and antigenic heterogeneity among isolates of *Bacillus piliformis*" in *Infectious Immunology*, Vol. 58, No. 4, 1010-1016, 1990. She received the Gold Chalk Award for the Biological Sciences Sector Dec., 1990.

Dr. Linda L. Collier, associate professor, published "Morphologic characterization of cultured retinal pigment epithelial cells from Chediak-Higashi syndrome (CHS)-affected cats" with T.L. McCalla in *Investigative Ophthalmology in Visual Science*, Vol. 31 supplement, 69, 1990. She published "Familial cataracts in the Chow Chow" with B.K. Collins, **Gary Johnson**, H. Shibuya, C.P. Moore and J.M. da Silva Curiel in *Transactions of the Twenty-first Annual Meeting of the American College of Veterinary Ophthalmologists*, p. 98, 1990. With J.S. Collins and B.K. Collins she published "Ocular Pathologic Findings in Vitamin-C deficient juvenile and red drum (*Sciaenops ocellatus*)" in *Transactions of the Twenty-first Annual Meeting of the American College of Veterinary Ophthalmologists*, p. 126, 1990. She published "Ocular surface disease associated with loss of conjunctival goblet cells in dogs" with C.P. Moore in the *Journal of the American Animal Hospital Association*, Vol. 26, 458-466, 1990.

Dr. Gary S. Johnson, associate professor, along with B. Keith Collins, **Linda Collier**, C.P. Moore, L.K. Riley and B. Ray, received a \$77,460 grant from the American Kennel Club for "Detection of carriers of heritable canine cataracts with genetic markers." The term of the grant is Jan. 1, 1991 to March 31, 1993. He also published, with B.K. Collins, **Linda Collier**, H. Shibuya, C.P. Moore and J.M. da Silva Curiel "Familial cataracts in the Chow Chow" in *Transactions of the Twenty-first Annual Meeting of the American College of Veterinary Ophthalmologists*, p. 98, 1990. He published "Von Willebrand Disease in Irish Terriers" in *Irish Terrier Club of America Newsletter*, November 1990.

Dr. Lela K. Riley, assistant professor, received a \$24,800 grant from the Grayson Jockey Foundation for her research "Use of an ELISA to Detect Antibodies to *Bacillus piliformis* in Adult Horses and Colostral Transfer in Foals." She also received a \$12,300 commercial gift award from the Charles River Labs for "Tyzzer's Disease: Diagnosis and Prevention." She published,

with **Cynthia Besch-Williford** and **K. Waggle**, "Protein and antigenic heterogeneity among isolates of *Bacillus piliformis*" in *Infectious Immunology*, Vol. 58, No. 4, 1010-1016, 1990.

Dr. Donald A. Schmidt, professor, published, with Jeannette M.A. da Silva Curiel, E.R. Pope and D.P. O'Brien "Ammonium urate urolith resulting in hydronephrosis and hydroureter in a dog with congenital portosystemic shunt" in *Canadian Veterinary Journal*, Vol. 31, 116-117, 1990. He published, with Marilyn G. Mikiciuk and W.H. Fales, "Successful treatment of feline cryptococcosis with ketoconazole and flucytosine" in the *Journal of the American Animal Hospital Association*, Vol. 26, No. 2, 199-201, 1990.

Dr. Steven L. Stockham, associate professor, received the Gold Chalk Award for Veterinary Medicine in December 1990.

Dr. Larry P. Thornburg, associate professor, published with G. Rottinghaus and M. McGowan, *et al.*, "Hepatic copper concentrations in purebred and mixed-breed dogs" in *Veterinary Pathology*, Vol. 27, 81-88, 1990. He published "Acute monesin toxicosis in Stone Sheep, Blesbok and a Bactrain Camel" with R.E. Miller, W. Boever and R.E. Junge in the *Journal of the American Veterinary Medical Association*, Vol. 196, 131-134, 1990.

Dr. Joseph E. Wagner, professor and chairman, announces that the Research Animal Diagnostic and Investigative Laboratory has been awarded a five-year contract for \$748,675 by the National Cancer Institute for "Operation of an Animal Disease Diagnostic Laboratory." He has written *Guide to Infectious Diseases of Laboratory Rats and Mice* with J.R. Lindsey, C.K. Hsu, J. VanHoosier, G. Boorman and R. Orcutt. The guide is published by the Institute of Laboratory Animal Resources, National Academy of Sciences, US Government Printing Office, 1990. He published "Naturally acquired enteric adenovirus infection in Syrian hamsters (*Mesocricetus auratus*)" with S.V. Gibson, A.A. Rottinghaus, H.S. Stills, P.L. Stogsdill and D.A. Kinden in the *American Journal of Veterinary Research*, Vol. 51, No. 1, 143-147, 1990. He published, with J.A. Davis, "Skin lesions in rats: What's Your Diagnosis" in *Laboratory Animal*, Vol. 20, No. 1, 342-344, 1990.

“Here she is, Dr. America....”



Debbye Turner takes a break in her hectic schedule.

IAN SIGHTS PHOTO

With her year as Miss America over, **Debbye Turner**, DVM '91, traded in her crown for a scalpel and settled back into the life of a fourth-year vet student in the small-animal surgery block.

“I’ve traded one busy schedule for another,” Turner says, referring to her final year at the college. “About the only thing I do now that I didn’t do as Miss America is my own laundry.”

Turner adds that it was a natural progression to return to school and leave the hectic routine of Miss America behind.

“There was no transition. I was Debbye before I became Miss America, I was Debbye after, I’m still Debbye,” she says. “What I did to fill up the day changed, but I’m still the same person.”

Turner’s year as Miss America did not radically change her goals and

plans for the future, but rather helped to better define and even further them. She says she would like to combine her desire to provide inspiration and guidance for young people with her skills in public speaking.

“Miss America just served as a really good opportunity to do that nationwide,” she says.

Turner also is considering other opportunities, including an invitation to do missionary work with a Christian ministry, an invitation to visit South Africa, the chance to buy into a private, small-animal practice and an offer to work as a professional speaker on the topic of youth motivation.

“I can honestly say that I have choices, which is a blessing. But it’s also hard, because it means I have to make the right choice.”

Another option which is dear to her heart is to combine public relations with her education in veterinary medicine and perhaps work as a spokeswoman or advocate for good pet health and nutrition, she says.

And then there’s the possibility of writing a book, a project which Turner says is still in its “very, very young stages.” She’s currently jotting down ideas, compiling lists and looking for a publisher. The book would essentially tell her life story and describe the odds she had to overcome, “with the basic purpose of serving as inspiration,” she says.

Turner graduated May 10, and earned a new title. Now she jokes, you can call her “Doctor America.”

College receives Miss America scholarship

When **Debbye Turner**, DVM '91, won the Miss America 1990 crown, the College of Veterinary Medicine became a winner, too. Last spring, the Miss America Organization, which conducts the pageant, donated \$10,000 to the scholarship fund.

The College has established an endowed scholarship with the donation and plans to present the award at the annual honors banquet May 8.

“It’s going to be an annual award,” says Dr. Kenneth Niemeyer, associate dean for student and alumni affairs. “The interest from the \$10,000 will be used to present

the award.”

Niemeyer estimates that the amount of the first award will be about \$500.

According to the stipulations of the Miss America Organization, the recipient must be a female student. Niemeyer says the College has set the additional criteria of good academic standing and evidence of leadership within and outside of the College.

He adds that female students in their third year of study will be eligible for the scholarship. All students in the VM-3 class will have a chance to vote for a worthy

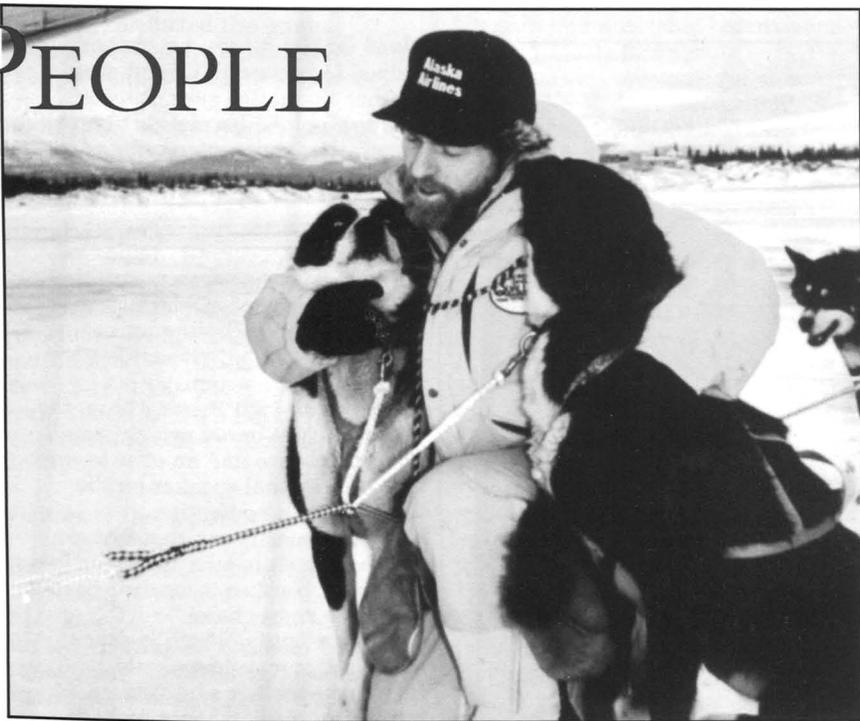
recipient.

“They’ll look for what officer ranks the candidate has attained in the College and what extracurricular activities she’s done to promote the College,” Niemeyer says.

There are no restrictions on how the recipient may use the money she receives. Niemeyer says he expects recipients will use the money for college expenses.

Because the scholarship is endowed, a donor could contribute to the fund at any time, he says, adding that he hopes the College will be able to carry the program on forever.

PEOPLE



Sled dogs are among the patients Leach treats at his veterinary hospital.

Alum finds adventure in Alaska

Eighteen years ago, **Dr. James Leach III**, DVM '64, and his wife, Annie, both of Fulton, Mo., were looking for a place where they could combine their love of flying and their small-animal practice. They found it in Alaska.

"We were just looking for the adventure," says James Leach, 52, who now owns the Big Lake Veterinary Hospital 70 miles north of Anchorage and makes village calls in his Cessna 180 to outlying areas. Annie Leach manages the office.

For the past three years, they've given others the chance to participate in the adventure, too. He has created an externship program for veterinary students in their fourth year or the second half of their third. The externs come on free block for four to eight weeks and experience life as a vet on America's last frontier.

"They assist us with cases all the way through," James Leach says. "They get the advantage of being able to see first-hand how the financial and economic side of a practice goes."

The first extern in the program was **James Sparks**, DVM '90. Other MU students who have participated in the program are: **Mark Gutzmer**, DVM '90, **Mike Jaffe**, **Michelle**

Freeman, **Ilona Specter**, **Linda Patton**, **Mary Kyger**, **Tim Walsh** and **Phil Buhman**, all DVM '91.

Leach began to accept externs from Purdue, Colorado State and the University of Michigan about two years ago. Since the program began, about 15 externs have worked with Leach.

"We've been very pleased with the externs, especially those from Mizzou," he says. "They're very practical graduates."

The program is operating year-round now, Leach adds. He generally has two externs on staff from May to October, his busy season, and only one during the winter.

The externs work in the veterinary hospital and tend to cases such as lacerations, abscesses and neutering. Leach says he lets them do laboratory and clinical pathology work. He also tries to let each extern perform minor surgery under supervision. Externs participate in one major surgery if they have the academic background, he says.

Leach hopes that he'll eventually be able to turn one or two externs into staff members at his clinic.

"We're looking for those who are motivated and interested in taking the responsibility," he says.

There's more to life in Big Lake than work, although Leach says he

often puts in a 16-hour day. He says he encourages the externs to take time for recreation.

"We try to get them out some times to play," he says, adding that ice fishing, dog sled rides, skiing and snow-shoeing are popular pastimes.

In addition to training externs and working on sled dogs, small-animal patients, or llamas and alpacas, which are raised on breeding farms or kept as pets, Leach spends 10 or 12 days each quarter making village calls. He covers an area of about 1,000 miles and calls on about 15 villages, many of them native, where a "gusaok"—a white man—is a minority.

If he's not conducting bush clinics for pets and sled dogs in the villages, he may make the 17-minute flight to Anchorage to pick up sick or injured animals sent there from outlying areas.

"We load the plane up with oxygen, surgical gear; we just essentially take a minihospital with us," he says.

He also has served as chief veterinarian for the past five years at the annual Iditarod Sled Dog Race, a 1,000-mile run from Anchorage to Gnome.

Besides treating the typical athletic and cold-weather injuries sustained by sled dogs, Leach has handled some challenging cases. The most memorable include putting a leg prosthesis on a llama and performing more than six hours of surgery on a dog that had tangled with the propeller of an airplane. He also put a steel plate into a sled dog's head after the unlucky animal was kicked by a moose.

"We see quite a few dog-moose confrontations," he says, "and a few dog-bear confrontations. Unfortunately, those are pretty one-sided."

Leach has come to consider Alaska home after all these years. He says he likes the winters and enjoys the ability to "literally walk out the door and be away from people." He runs about five miles a day, all year long, despite temperatures that can plunge to 58 below zero and a wind chill factor that reaches an icy 80 or 90 below zero. He also fishes and hunts and tends to his gold mine, which he's operated for 12 years.

Leach says he doesn't mine enough ore to retire just yet. Until he does, he plans to continue doing what he loves: practicing veterinary medicine.

Serving the profession in the AVMA

Dedication to the veterinary medical profession and sheer enjoyment of their work have led to rewarding accomplishments for Drs. **Gerald L. Johnson** of Independence, Mo., and **Leon H. Russell** of Tulsa, Okla., both 1956 graduates of the College. At the American Veterinary Medical Association meeting last July, Johnson became president-elect of the 50,000-member organization, and Russell was elected chairman of the executive board.

For Johnson, who will assume the presidency in July, attaining this position is the highlight of his career.

"To me, this is the epitome of the profession," Johnson says. "I've always been an organization person involved in promoting the profession."

Johnson has been a member of the AVMA for 35 years, serving on the public relations council and as a district representative on the executive board. He also served on the Food Animal Veterinarians Organized for Results (FAVOR) Task Force, which worked with the Federal Drug Administration on the problem of drug residues in food animals.

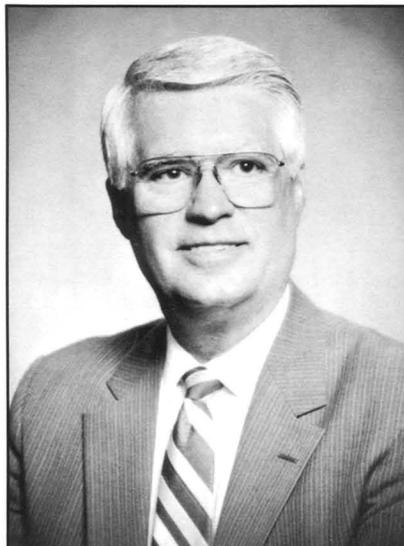
In addition to these activities, he was vice president and treasurer of the AVMA Foundation, and is a member and former president of the American Association of Industrial Veterinarians.

As president-elect of the AVMA, Johnson says his message to veterinarians at state and regional association meetings is based on the theme of commitment to service.

"I emphasize the importance of being involved. The AVMA is not some mystical group off in never-never land," he says, adding that he tells veterinarians, "The AVMA is you and me."

He says he encourages students to stay involved in the organization after graduation. He is proud of the fact that approximately 85 percent of the veterinarians in the country are members of the AVMA.

When he's not traveling to meetings, Johnson works as manager of professional services for the Mobay Corporation Animal Health Division. He works with six



Gerald L. Johnson



Leon H. Russell

staff veterinarians and oversees the production of technical information about the company's biological and pharmaceutical medicines.

"I love what I do now. It's just a different facet of veterinary medicine," says Johnson, who ran a private practice in Independence for 12 years after graduating. "I'm in contact with veterinarians every day,

so I keep current with what's going on in the field."

The chance to meet practitioners and others in veterinary medicine is one of the aspects that Leon Russell says he's enjoyed as chairman of the executive board. Russell, who has been a member of the AVMA for 35 years, served as a district representative on the executive board before being elected chairman.

He describes the position as the most powerful in the AVMA, because he acts as chairman for both the 15-member executive board, which meets four times a year, and the board of governors, which convenes between executive board meetings. He says the board of governors makes the majority of decisions on important issues or on those issues that can't wait until the next executive board meeting.

"Whatever happens to be the problem or situation at the moment is what we take care of," says Russell, adding that one of the major issues this year has been the FDA's plan to impose more stringent regulations for veterinarians regarding drug compounding.

Russell says AVMA representatives have formed a task force to develop guidelines for practitioners.

When he's not making at least one trip each week to various meetings and conferences across the country, Russell, a professor of veterinary public health and medical microbiology and immunology, teaches at Texas A&M University.

"Educating students is my best contribution to the profession," he says.

He adds that he has little time for leisure activities, but doesn't mind because, "my work is my hobby."

"I enjoy it so much. It's always challenging," he says. "The veterinary medical profession is the best in the world, as far as I'm concerned."

Both Johnson and Russell say they are pleased with the directions their careers have taken and express satisfaction with their work in the AVMA. As Johnson put it, "It's an opportunity to give something back to a profession that has done a lot for me."

ALUMNI

News

The Fifties

Hubert C. Sebolt, BS Ag '51, DVM '51, has notified us that he is "three-fourths retired." He says all he's doing is "giving rabies and distemper shots and dispensing pills." He's been in private practice since 1951 in Buckner, Mo.

The Seventies

Bill Porter, DVM '78, relocated in 1990 from Great Falls, Va., to Cincinnati, Ohio, and became head of laboratory animal medicine in the pharmaceutical research and development section of Marion Merrell Dow Inc.

Gary A. Vroegindewey, DVM '78, a partner in the Rolling Hills Veterinary Hospital in Columbia, was called to active duty in January with the 141st Army Veterinary Reserve Unit. He is a major in the unit, which is responsible for care of government-owned animals such as bomb-sniffing and guard dogs.

The Eighties

Ben W. Johnson, DVM '81, recently completed a residency in comparative ophthalmology at the University of Illinois. He obtained board certification in the American College of Veterinary Ophthalmologists in 1989. In July 1990 he opened Animal Eye Associates, a referral ophthalmology practice in St. Louis.

Kay Tung, BS Ag '79, DVM '82 and **Pierre Tung**, DVM '81, announce the birth of their second son Robert on Dec. 13, 1990. The couple also told us that they purchased an animal hospital in St. Louis in 1989.

Mark J. Martinez, BA '78, DVM '82, is a captain in the U.S. Army Veterinary Corps and worked with Operation Desert Storm since mid August. He provided veterinary medical and surgical care for military working dogs, and public health services for the forces. He says he "can't wait to get back home."

Mary E. Meyer, BS Ag '79, DVM '83, married Perry E. Simeroth Oct. 13, 1990. They are living in St. Peters, Mo., where she is employed at Cave Springs Animal Hospital, a small-animal practice.

Lorin D. Lawrence, BS '78, MS '79, DVM '83, hired the first associate at his clinic May 10, 1990, and took his first vacation since 1983. He plans to build a new clinic in two or three years. He says a Charlotte, S.C., NBC affiliate has interviewed him about doing evening news spots on rabies and RMSF.

Julie A. Robinson, BS Ag '81, MVSc '89 (Saskatchewan), DVM '86, recently completed a clinical fellowship at New Bolton Center in Pennsylvania. She is now working toward a PhD in veterinary microbiology (immunology) at MU. She's employed as a research associate in veterinary microbiology.

Terri Ann Tucker-Warhover, BS Ag '83, DVM '86, announces the birth of her son, Zachary Thomas, on March 29, 1990.

Blaine L. Andrews, DVM '86, and his wife, Robyn, announce the birth of their daughter, Lauran Linette, on Oct. 24, 1990.

Kevin James Kohne, DVM '87, and his wife, Mary, announce the birth of their first child, Michael James, on Sept. 6, 1990.

Craig Tockman, BA '82, DVM '89, has joined the Page Animal Hospital in St. Louis. In addition to general practice, he performs the BOP/Sertl shelf arthroplasty with Dr. Donald Jensen.

Jefferson Club

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Las Vegas, Nev.

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DVM '71
Sharon Klingler
St. Louis, Mo.

Leonard O'Brien
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Robert R. Reeves
Judi Reeves
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Dr. William E. Ribelin
Frankie Ribelin
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Dr. Leon H. Russell Jr.
DVM '56
Martha Russell
College Station, Texas

Mrs. Morton Zalk
St. Louis, Mo.

For more information on how you can join the Jefferson Club and invest in Miz-zou's College of Veterinary Medicine, write Michael Tarry, Director of Development, W203 Veterinary Medicine, UMC, Columbia, Mo. 65211, or call (314) 882-3768.

Alumnus of the Year loves his work

The 1990 recipient of the Alumnus of the Year Award, **Dr. Richard "Dick" Taylor**, can't think of anything else he'd rather do than practice veterinary medicine.

"I just never found anything else that I thought I was really interested in," says Taylor, BS Ag '62, DVM '62.

The Shelbina, Mo., native established a mixed practice in Fayette, Mo., immediately after graduation, began to work with a partner in 1972, and was incorporated in 1987.

Although the practice keeps him busy treating swine, beef cattle and an occasional pot-bellied pig, Taylor, 54, has found the time to tap a journalistic vein. Since 1982, he's published *HAM & STEAK*, a newsletter about veterinary practice. The title is an acronym for Health And Management—Serving The Entire Animal Kingdom.

The purpose of the newsletter is to promote the profession, Taylor says, and to keep other veterinarians up-to-date on such subjects as how to modernize their facilities.

Taylor's other professional activities include serving on the Council on Biologic and Therapeutic Agents, or COBTA, which advises the AVMA executive board on such issues as the FDA's proposed restrictions on drug compounding. Taylor says COBTA is working to establish a definition of compounding and a set of controls designed to protect veterinarians' rights. He describes his work with COBTA as a high point in his career.

Taylor has been active in the AVMA since he graduated. He served as president in 1974, alternate delegate from 1976-81 and delegate from 1982-88. He was selected Missouri Veterinarian of the Year in 1989. A member of the American Association of Swine Practitioners, Taylor was named Swine Practitioner of the Year in 1987.

Taylor's professional side is only one facet of his personality. He describes himself as a family and community-oriented person who enjoys giving presentations to a Bible school class as much as to a group of veterinarians.

He has served on the Fayette R-3 board of education and was president of the Fayette Lions Club in 1968. He's also been active in the 4-H Club as chairman of the 4-H/FFA Livestock Show.



Dr. Richard "Dick" Taylor, DVM '62, shares a proud moment with Dr. Ava Frick, DVM '80, then-president of the College's Alumni Association.

One of his favorite pastimes is acting in shows staged by the Fayette Area Community Theater. He played a doctor in *Go West*, *Young Man*, and had a non-singing role in *Music Man*.

"I was a soft touch when they couldn't get someone to play parts," says Taylor, who has served on the theater's board of directors since 1988.

Of the many roles he has played in his life, both on and off-stage, he considers fatherhood the most important. He and his wife, Joyce, have three children: Leigh Anne teaches home economics at the Secondary Learning Center, Rick is with the Marines in Saudi Arabia, and Lisa is studying early childhood development at MU.

With his contributions to the profession and his civic involvement, it's easy to see why Taylor received

the Alumnus of the Year Award, which the Veterinary Medicine Alumni Association gives in recognition of leadership in the profession and the community.

"It was certainly an honor. I appreciated the recognition," Taylor says, adding that he has derived as much satisfaction from his activities as from receiving the award itself.

From the Editor's Desk

Hello. I'm pleased to introduce myself as the new editor of the **Vet Med Review**.

As a free-lance writer and editor, I'm fortunate to have the opportunity to explore many diverse subjects and learn something new virtually every day. Producing an issue of **VMR** is no exception. Animal health and medicine is one of the topics that I find most fascinating, and I certainly learn more with each interview I conduct.

After working on just one issue as **VMR** editor, I'm already looking forward to the next. I hope you've enjoyed reading this issue as much as I've enjoyed writing it.

I plan to maintain the high standards set by my predecessors and to keep bringing you an informative and entertaining magazine.

Join the Alumni Association

Be an active member of the Mizzou Alumni Association. Your \$25 annual dues make you a member of the College of Veterinary Medicine Alumni Association, plus you will receive other benefits. Part of your membership dollars will support Mizzou's Homecoming, student recruitment, reunions, spirit squad and seminar weekends.

Send your payment to the Alumni Association, 132 Alumni Center, Columbia, Mo. 65211.



DON CONNOR PHOTO

Construction of the new veterinary teaching hospital is moving along as planned, and the progress is exciting to see. In just a few short months, the building has been transformed from a sketch on paper to the brick-and-girder skeleton of the hospital-to-be. The site, once a muddy and bare expanse of ground, now sports the beginnings of walls and floors. During the last autumn's balmy weather, builders completed the general excavation, poured the footings and set some exterior walls. The builders have also put in the decking above the bovine area and will soon pour the small animal floor, or the second floor of the building.



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Nomination form for

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