

IN

SIGHT

Winter 2000

College of Veterinary Medicine
and Biomedical Sciences



Mobile Equine Unit Brings State-of-the-Art Clinic to Patients

Reorganization Provides Solid
Foundation for Change

PVM Program Enhances
Veterinary Education

Colorado
State
University

Knowledge to Go Places

INSIGHT

Volume 27 Number 3
Winter 2000

On the cover: The Equine Sports Medicine Mobile unit brings state-of-the-art veterinary facilities to horse shows, allowing horses, veterinarians, students, and clients to benefit from a readily available clinic on wheels.

Insight is published three times per year by the College of Veterinary Medicine and Biomedical Sciences, Colorado State University, and produced by Publications and Printing.
Editor/Writer: Carol Borchert;
Photographers: Charlie Kerlee, Bill Cotton;
Production: Sandy Thode;
Production Coordinator: Margaret Taunt.

Visit us on the Web at:
www.cvmb.colostate.edu

Welcome

Happy Holidays and welcome to the Winter 2000 edition of *Insight* magazine. In this edition, you'll find a cornucopia of articles dealing with a variety of issues. One of the most important issues facing the College is reorganization. And as we approach the end of the year, we are coming into a time of change. We have streamlined and realigned departments, appointed several new people to key positions, and are in the midst of a search for a new dean to replace Dr. James Voss, who will be retiring next year. Inside, you'll find an article about the College's reorganization efforts and their impact on our future direction.

We also go on the road with the College's mobile equine unit. The unit enables veterinarians to provide care to equine athletes, providing valuable experience to students and on-the-spot care for injured patients. You'll meet Dr. Herbert Schweizer, who is studying a bacterium that causes severe illness in cystic fibrosis patients. An unexpected outcome of his research led to another study (see the sidebar story, page 11) in the use of antibacterial agents in every day soaps, lotions, and other household items.

In addition to these stories, you'll learn more about the innovative nonmedical course work offered through the Professional Veterinary Medical program and the new Kenneth "Kenny" Smith Professorship. You'll also read an update on the Paws For A Cause campaign and more.

We hope you enjoy this edition of *Insight*. We welcome your questions and comments on these articles or anything else you'd like to share with us. If you'd like to get in touch with us, please send your correspondence to:

Insight Correspondence
Office of the Dean
W102 Anatomy/Zoology
College of Veterinary Medicine and Biomedical Sciences
Colorado State University
Fort Collins CO 80523-1601

You can e-mail *Insight* comments to Paul Maffey, director of development for the College at: pmaffey@cvmb.colostate.edu. We also invite you to visit us at our Web site at: www.cvmb.colostate.edu. ■

Table of Contents

Mobile Equine Unit Brings State-of-the-Art Clinic to Patients 3
 Paws For A Cause Sparks Excitement with New Ad Campaign 5
 Reorganization Provides Solid Foundation for Change 6
 PVM Program Enhances Veterinary Education 8
 Understanding Cell-to-Cell Communication May Offer Hope
 to Cystic Fibrosis Patients 10
 Americans Too Clean for Own Good? 11
 Smith Family Creates Living Legacy for Veterinary Education 12
 Equine Reproduction Courses/Continuing Veterinary Medical Education 14-15
 Dr. Kimberling Honored 16
 Dr. Salman Receives APHIS Award 16

Mobile Equine Unit Brings State-of-the-Art Clinic to Patients

When Dr. Joe Stricklin was involved with rodeo sports, he noticed that a lot of cowboys and cowgirls took advantage of a truck-and-trailer traveling medical clinic. The Justin Sportshealer Program enables rodeo athletes to get prompt attention for their injuries, sometimes preventing a worsening of their condition and sometimes even getting them back in competition. To Dr. Stricklin, it provided an inspiration.

"I thought about it and figured horses are athletes, too, so why wouldn't a similar program work for them," said Dr. Stricklin, who is an assistant professor in the Department of Clinical Sciences and runs the mobile unit.

At the time, Dr. Stricklin was in private practice and put together the resources to purchase and equip a truck and trailer to house his mobile clinic. When he joined Colorado State last year, the truck was purchased by the College to enable Dr. Stricklin to continue the program, only now with students on board as well. The unit, the only one of its kind in the nation, is an ideal training ground for veterinary students to practice their large-animal skills in real-world situations.

The mobile unit also offers its equipment to veterinarians who are working at horse shows. Almost all diagnostic information, from radiographs to ultrasounds, can be sent online to consulting veterinarians at other locations, including experts at the Veterinary Teaching Hospital. This enables veterinarians with clients and patients in shows to provide care without having to trailer and transport the horse to a different site. The mobile unit functions as an on-site tool providing visiting veterinarians the opportunity to offer high quality on-site care in a timely fashion.

Operating as a full-service veterinary clinic, the mobile unit travels to eight to

12 regional horse shows per year. The veterinary team treats equine athletes participating in multi-day events including barrel races and cutting shows – most recently the Cutting Horse Futurity in Fort



Veterinary students check out a patient in the mobile equine unit.

Worth, Texas. Bringing the mobile unit to a show benefits students by providing common scenario cases and benefits practicing veterinarians, owners, and horses by providing easy access to veterinary facilities and care.

"Shows are very competitive, and a lot of money is involved in just getting there," said Dr. Stricklin. "It's heartbreaking for people when they've traveled a long way, invested a lot of money, and their horse turns up lame. Sometimes, it's a severe injury that requires intensive care

**The mobile unit
operates as a full-
service veterinary clinic,
traveling to eight to 12
regional horse shows
per year.**

and the horse is certainly out of the competition, but sometimes it's something fairly minor that can be taken care of with quick treatment, enabling the horse to return to competition. For many horses, having on-site care makes all the difference."

Dr. Stricklin recalls one woman from Oklahoma who had traveled to Texas for a barrel race. When the horse came out of its trailer, it was lame. The diagnosis was a foot problem caused by a shoe applying too much pressure. With treatment, the horse recovered quickly and was able to compete and win.

"This was the first time this woman had ever won in her life," Dr. Stricklin said. "She went from being completely out of the competition to taking home first

saddle. She was thrilled, and the students were able to see what they could do and what a difference they could make. We were all very excited."

To help make those veterinary marvels happen, the equine mobile unit is equipped with state-of-the-art diagnostic tools and treatment options. Diagnostic equipment includes:

- Conventional radiographs that allow clinicians to take images of a horse's bones and joints to help diagnose injuries.
- Ultrasonography, used to provide images of tendons, lungs, and abdominal structures. The images can be projected onto a viewing screen.
- Videoscope, a small camera that attaches to several pieces of equipment, such as an endoscope, and allows images to be recorded and displayed on a television screen.
- A thermal imaging system that displays differences in surface body

continued on page 4

Mobile Equine Unit

continued from page 3

temperatures, enabling determination of areas of inflammation.

- Routine bloodwork and chemistries that can be completed on-site, saving time in critical situations.

Treatment options available include:

- Theraquine, an electrical stimulation unit placed on the site of an injury. Electrical pulses increase blood flow to the injured site, allowing for faster healing.
- Equi-light, a light therapy system using photoenergy to increase circulation to an injured area.
- An iontophoresis delivery system that uses positive and negative currents to drive a specific treatment drug through the skin and into injured tissue.
- The Ice Horse Cold Therapy system that helps reduce inflammation by using cold therapy that can be applied evenly and at a set temperature.
- Equine AeroMask, a mask that allows accurate delivery of inhalation drugs.

Of course, the mobile unit has to take care of its human occupants as well as its



A veterinary student steadies a patient inside the mobile clinic.

patients. On each trip, Dr. Stricklin, whose CB handle is “Hoss Doc,” usually takes three or four veterinary students with him. The unit is equipped with a cooking area, shower, and sleeping quarters and can comfortably house four people. The unit is always staffed, with two people staying overnight in case of emergencies, while the remainder of the team is provided with accommodations in nearby hotels.

“Having this unit really enhances the hospital’s teaching mission,” said Dr. Stricklin. “We expose our students to the problems facing horse owners and trainers at competition, and better prepare them to serve the horse show and competition industry. They see a lot of routine cases that they might not otherwise be exposed to at the Veterinary Teaching Hospital, where a substantial portion of the caseload is the more critically ill or injured horse. This experience helps to prepare them for a more typical practice.”

The mobile clinic is invited to shows by organizing committees, which usually cover hotel room costs for the traveling



Leading-edge diagnostic equipment and communication tools line one wall of the mobile unit.

veterinary team. The College strongly encourages local veterinarians to use the mobile unit to enhance services to their clients. Owners or attending veterinarians pay competitive fees for diagnosis and treatment services at the mobile clinic. Additional support for the unit is raised through corporate and individual donations. If you’re interested in learning more about the mobile unit, or would like to make a donation to help keep it on the road, contact Dr. Stricklin at (970) 491-4580 or the College’s development officer, Paul Maffey, at (970) 491-3932. ■

The mobile unit also offers its equipment to veterinarians who are working at horse shows. Almost all diagnostic information, from radiographs to ultrasounds, can be sent online to consulting veterinarians at other locations, including experts at the Veterinary Teaching Hospital.

Paws For A Cause Sparks Excitement with New Ad Campaign

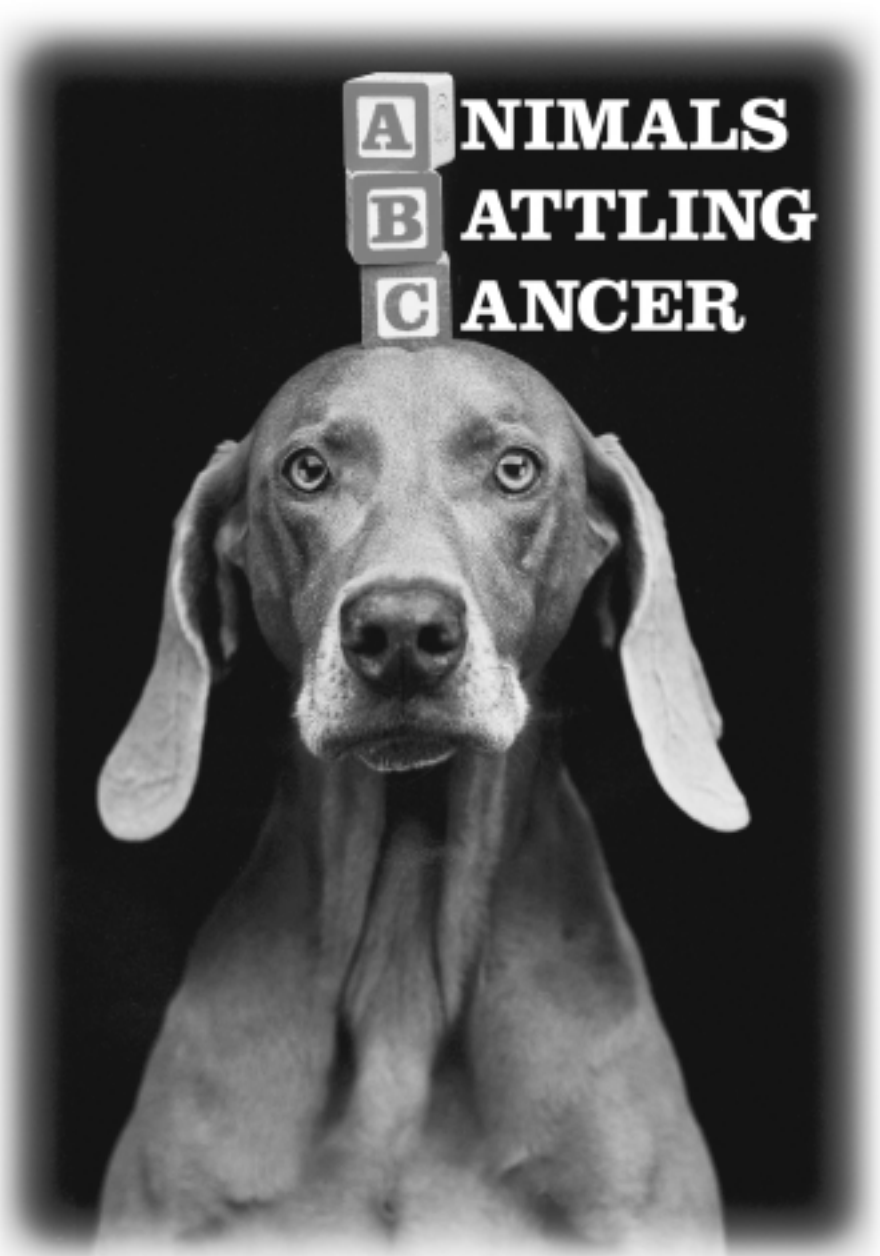
The photo is startlingly simple, one of the now-famous Wegman weimaraners with three children's A, B, C blocks on her head. The message also is clear: Animals Battling Cancer. The new advertisement, which appeared most recently in *Real Simple* magazine and will soon appear in *Oprab*, *Vanity Fair*, and *Animal Fair*, features the newest spokesanimals for Paws For A Cause, the Wegman dogs.

The current ad is a photo of Fay Ray, who was one of photographer William Wegman's favorite "models." Fay Ray graced the pages of magazines and books, and appeared on television and in museum exhibitions around the world. In 1995, after 10 loving years with Wegman, Fay Ray was diagnosed with acute leukemia and died later the same year. Wegman's commitment to the Animal Cancer Center and the Paws For A Cause campaign is a reflection of his bond with Fay Ray and a tribute to her life.

Paws For A Cause is a national campaign to raise awareness of cancer in companion animals and raise money to help fight cancer in companion animals. Donations are used to expand and enhance cancer treatment, research, and teaching programs at the Animal Cancer Center and assist in the expansion of the physical space necessary to house these programs.

Paws For A Cause uses ClayPaws® as an incentive for gifts to Paws For A Cause from the general public. With a donation of \$50 or more, donors will receive a ClayPaws® kit to make a paw print of a beloved pet. With a donation of \$100, donors will receive a Paws For A Cause T-shirt, featuring artwork from the Fay Ray print advertisement.

The Paws For A Cause campaign will end Dec. 31, 2000, though the Wegman dogs will continue as spokesdogs for the Animal Cancer Center. For more information, or to order ClayPaw® kits or Fay Ray T-shirts, contact 1-877-4CSUVET or visit www.cancercure.colostate.edu. ■



Wegman's commitment to the Animal Cancer Center and the Paws For A Cause campaign is a reflection of his bond with Fay Ray and a tribute to her life.

Reorganization Provides Solid Foundation for Change

“Nothing is permanent but change.”

— Heraclitus (500 B.C.)

During its 93 years of existence, the College of Veterinary Medicine and Biomedical Sciences has been through many changes – new names, new departments, new deans – times of upheaval and rancor and times of quiet and contemplation. Through all of these changes, the College has emerged stronger and better equipped to face the day’s challenges.

Today, the College is once again at a time in its history when change is necessary to better accommodate the shifting sands of teaching, research, and outreach. These changes include the reorganization of departments, the pending retirement of the dean with accompanying search and hiring of a new dean, the appointment of three new associate deans, and a critical shift in the organization of faculty members to better reflect their areas of research and teaching expertise.



Dr. Martin Fettman

“The College embarked on this journey of change when it became apparent that the current organizational structure was, at some point, going to hinder our ability to maintain and enhance the College’s world-recognized leadership role in veterinary medicine and biomedical sciences,” said Dr. James Voss, dean

“The creation of affinity groups is truly an exciting aspect of the new organization. Although faculty members often have interacted informally in this way, affinity groups provide them with a perfect forum to pursue research avenues that otherwise would be closed.”

of the College. “It had become apparent that if we wanted to continue to achieve at the highest level, we needed to address core issues and proceed with a new infrastructure that would enable innovation and excellence in research, teaching, and outreach.”

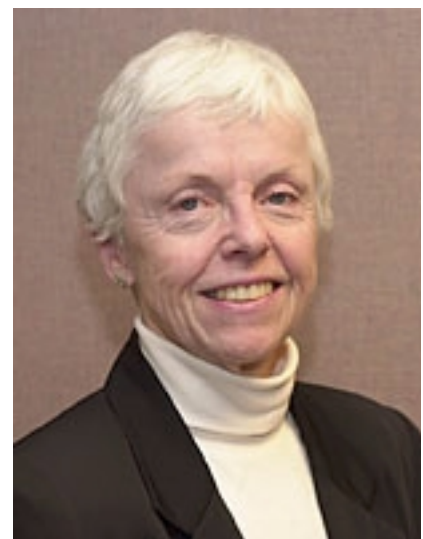
Some of the concerns of the College related to changes in the undergraduate teaching program at the College and University levels, including workload accountability, reduced participation in the Professional Veterinary Medical program by WICHE state partners, the large number of open department head positions, the significant number of potential faculty retirements in the near future, and the dynamic and team-oriented nature of today’s research environment.

After two years and literally hundreds of meetings and thousands of hours, the CVMBS Faculty Leadership Forum pro-

posed a reorganization plan. After faculty and staff review and considerable fine-tuning, the plan was adopted and the new College and Department Code is now in place. The process for implementing the reorganization is underway, with changes taking place at a pace that will accommodate change without creating chaos.

Probably one of the most visible changes will be the retirement of the dean. Dr. Voss, who has served as dean of the College since 1986, announced in October his intention to retire in October 2001. Dr. Voss’ desire was to have the reorganization completed before his retirement. At the time Dr. Voss’ retirement was announced, the Provost’s office stated that a search for a new dean would begin immediately to ensure ample time for a comprehensive search and smooth transition.

The second most visible change is the collapsing of seven departments into four. The new departments are Biomedical Sciences; Clinical Sciences; Environmental and Radiological Health Sciences; and Microbiology,



Dr. Carol Blair

“It had become apparent that if we wanted to continue to achieve at the highest level, we needed to address core issues and proceed with a new infrastructure that would enable innovation and excellence in research, teaching, and outreach.”

Immunology and Pathology. The structure reflects the College’s four principle programmatic areas of biomedical sciences, clinical applications of veterinary medicine, environmental health issues, and infectious diseases.

“The new departmental structure will enable individuals with shared areas of interest and expertise to work together more readily as teams to improve our missions in research, teaching, and outreach,” said Dr. Voss. “This is simply a reflection of the dynamic academic environment today and the most appropriate structure we can adopt to make the best use of all our assets.”

Interim department heads are being recruited for the new departments. The new dean will have the opportunity to appoint permanent heads.

The third change is the appointment of three new associate deans. Dr. Martin Fettman, who previously held a joint faculty appointment in physiology and pathology, is the new associate dean for Professional Veterinary Medicine. Dr. Terrance Nett, who has been a member of the faculty in physiology since 1974, is the new associate dean for Research and Graduate Education. Dr. Carol Blair, who previously served as department head for microbiology and has been on the micro-

biology faculty since 1975, is the new associate dean for Undergraduate Education. Dr. Sherry McConnell continues in her position as associate dean for Admissions and Advising.

Lastly is the creation of affinity groups. Faculty members are aligning with other faculty and staff, across old departmental boundaries, to reflect their teaching and

research interests. One such group is the Breast Cancer Affinity Group, which is comprised of faculty members from all four departments. The group meets regularly to share ideas and information, coordinate research activities, provide technical support and expertise, and develop interdepartmental grant proposals for funded research.

“The creation of affinity groups is truly an exciting aspect of the new organization,” said Dr. Voss. “Although faculty members often have interacted informally in this way, affinity groups provide them with a perfect forum to pursue research avenues that otherwise would be closed. In the competitive research market today, bringing all our talent to

the table will create more opportunities for exciting and meaningful research.”

The changeover to the new organization, and resulting realignment of responsibilities and programs, is underway, though will not be achieved overnight.

“Anytime you attempt a change of this size and complexity, you are sure to encounter some confusion, some glitches, and some delays,” said Dr. Voss. “But we firmly believe that the College is on a path that will lead us to continued excellence in education, ongoing innovation in research, and deliverable quality service and outreach. Change is never easy, but the alternative – to maintain the status quo – is simply not an option if we are to embrace our future.” ■



Dr. Terrance Nett

PVM Program Enhances Veterinary Education by Tackling Nonmedical Needs

Not so long ago, veterinary students studied pathology, pharmacology, anesthesiology, oncology, and a host of other “ologies.” When they graduated, they entered the professional world prepared to practice veterinary medicine. But – a funny thing happened on the way to the clinic – all that wonderful medical training was not totally preparing veterinarians for one of the most important aspects in their practice; the relationship between the veterinarian and his or her client.

“Over the years, the dynamics of the relationships between people and their companion animals has evolved,” said Carolyn Butler, coordinator of the Bond-Centered Practice Education Service at the College of Veterinary Medicine and Biomedical Sciences’ Argus Institute. “For a number of reasons – increased companion animal longevity, societal mobility, long-distance extended families, and many others – people are becoming more attached to their animals. The resulting bond creates some interesting challenges for veterinarians who must now not only care for the patient, but also tend to the owner.”

At Colorado State, this evolution of the human-animal bond was especially evident at the Animal Cancer Center, which attracts critically ill patients and their families. More than 15 years ago, chief oncologist Steve Withrow reached out to the Department of Human Development and Family Studies to help students, faculty, staff, and clients deal with the high emotions surrounding serious illness and loss of a pet. An initial lecture eventually gave rise to Changes: The Program for People and Pets. Laurel Lagoni, currently managing director of the Argus Institute, and Suzanne Hetts, now an animal behavior consultant to the Argus Institute, initiated the development of a comprehensive curriculum in client relations that is unmatched anywhere else in the world.

“Colorado State has the most complete curriculum related to client and/or staff relations in the country,” Butler said.

“We offer 91 contact hours within the context of a very applied teaching format so that we can help future veterinarians handle common situations that arise in everyday practice. Areas we cover include decision-making, handling angry clients, client-present euthanasia, children and loss, clients with financial constraints, staff relations, stress and self-care, and much more.”

Students in the Professional Veterinary Medical (PVM) program are first exposed to the client relations (CR) curriculum in the freshman perspectives and sophomore ethics classes. In their junior years, they can take a 20-hour elective to develop communication skills and practice with role-playing. Last year, a new course in staff relations also was introduced as a junior-year elective. In their senior years, students can take a 40-hour elective that offers direct contact with clients, intensive work with Changes counselors, and comprehensive skills building.

Butler and Changes staff members also take the CR curriculum on the road to other veterinary schools through Purina-sponsored seminars that enable more veterinary students to gain exposure to CR course work that is difficult to obtain elsewhere.



Dr. Steve Atwater (right) talks with Bill Kile with his dog Ranger. Client communications is one of the skills veterinary students learn in client relations course work at the Veterinary Teaching Hospital.

Surveys conducted by the Argus Institute and other organizations show that CR training pays off in many ways. A recent report published in JAVMA, stated those veterinarians “who understand the human-animal bond apparently will be more successful in private practice than

“For a number of reasons – increased companion animal longevity, societal mobility, long-distance extended families, and many others – people are becoming more attached to their animals. The resulting bond creates some interesting challenges for veterinarians who must now not only care for the patient, but also tend to the owner.”

those who do not.” The Argus study was designed to assess differences between veterinarians who had taken the elective CR classes and those who had not.

The study, which surveyed 214 graduates of the PVM program (1990-1999, with 108 responding), found 88 percent would recommend the CR classes to other students. Nearly 42 percent of respondents felt the skills they learned in the CR curriculum were of equal or greater value as compared to other skills developed in other PVM programs. The study showed many other benefits of CR training including lower staff turnover, increased client loyalty, greater self-fulfillment, and increased financial success.

“I was a private practice mixed-animal practitioner for six-and-a-half years

prior to the military,” responded Dr. Margery Hanfelt. “When I was in vet school, I took Changes courses and used that information extensively throughout my career. That training was invaluable, is used daily, and accounts for a large part of my success.”

Dr. Tony Knight, head of the Department of Clinical Sciences, said the CR course work is an important part of the PVM curriculum.

“As a profession, we have had to recognize and respond to the changes in veterinary medicine,” said Dr. Knight. “One of those changes is the emergence of the human-animal bond as a factor in the practice of veterinary medicine. We are fortunate to have at Colorado State such an innovative program in client relations.

It benefits both the students, and their future clients as well.”

Future plans for the CR curriculum include expansion of continuing education opportunities for practicing veterinarians as well as out-state students, and the creation of new course work in animal behavior.

“By building on our success in client and staff relations, we hope to continue to grow our program to meet the needs of our students and of veterinarians already in practice,” Butler said. “Veterinary medicine is a dynamic field, and the College wants to give our graduates all the tools and skills they need to be successful. An important component of that is the comprehensive approach to client relations available only at Colorado State.” ■

B. W. Pickett Equine Center Dedication

Presentation of flags at the dedication ceremony.



Pickett family members attending the ceremony.



Honored guests and presenters gathered together Dec. 1 to dedicate the Colorado State University B.W. Pickett Equine Center. Dr. Pickett, a retired Colorado State faculty member, worked tirelessly to raise funds and private support and was instrumental to the completion of the Equine Center. On the platform, from left to right, at the dedication are G. Marvin Beeman, an Equine Center supporter; Dr. James Heird, associate dean of the College of Agricultural Sciences; Dr. Albert Yates, president, Colorado State University; at the podium, Dr. James Voss, dean, College of Veterinary Medicine and Biomedical Sciences; and Dr. B.W. Pickett. The College wishes to thank the hundreds of organizations and individuals who have contributed to the construction of the B.W. Pickett Equine Center over the years. The Center is now a national showcase and hub of exciting programs in equine teaching, research, and outreach. ■

Understanding Cell-to-Cell Communication May Offer Hope to Cystic Fibrosis Patients

Communication is essential to the human race. We talk in person, on the telephone, via the Internet, and in many languages and styles. Without communication, the world as we know it would sim-



Dr. Herbert Schweizer

ply not exist. The same is true of bacteria. Their molecular communication is essential for the creation of microbial communities – communities that are often benign, but sometimes capable of causing great illness.

Researchers at Colorado State University hope that by understanding this cell-to-cell communication at its most basic level, they may be able to devise ways to cause a breakdown in the molecular chit-chat that will disable certain bacteria and render them incapable of causing disease.

Dr. Herbert Schweizer, an associate professor in the Department of Microbiology, is studying cell-to-cell communication of the *Pseudomonas aeruginosa* bacterium, an opportunistic pathogen that causes problems for vulnerable humans

and animals. The infection is best typified in cystic fibrosis patients who have a difficult time fighting the infection and who, in most cases, eventually die of *Pseudomonas aeruginosa* infections.

Cystic fibrosis is an inherited disorder, afflicting patients from early childhood well into their adult lives. People with cystic fibrosis secrete very thick mucus from the upper respiratory tract. Since the abnormally thick mucus prevents proper clearing of bacteria from the lungs, the person's lungs become chronically infected. Different people have different levels of abnormalities in cystic fibrosis. Some people are very ill when they are quite young. Others can live many years with mild abnormalities. Half of males with cystic fibrosis now live to be more than 30 years old. Half of females with cystic fibrosis survive beyond 28 years. The *Pseudomonas aeruginosa* bacterium is a common source of infection in all cystic fibrosis patients, regardless of age.

“This pathogen also causes problems for burn victims, surgical patients, injured patients, people whose immune systems are compromised, cancer patients, the

elderly, and others,” Dr. Schweizer said. “All *Pseudomonas aeruginosa* bacteria need an opportunity to cause disease, and that is when the cell-to-cell communication comes into play. When the bacteria are isolated, they do not make the molecules for communication. But when they colonize a susceptible area – a catheter or mucus-filled lung for example – cell-to-cell communication becomes essential to creating a disease state. If we can interrupt this communication and break down their connection, we may be able to prevent infection.”

Pseudomonas aeruginosa is particularly vexing because of its hallmark characteristic – a strong resistance to antibiotic treatment. The bacterium has multiple efflux systems that pump out antibiotics and other antimicrobials before the chemicals have a chance to inflict any damage. These multi-drug pumps enable the bacterium to rapidly develop a resistance to a host of antibiotics, making it very difficult to treat. Chronic infections that range from annoyances to life threatening can develop in humans and animals. In addition to his laboratory work in cell-to-cell communication, Dr. Schweizer works cooperatively with Dr. Claudia Gentry-Weeks from the Veterinary Teaching Hospital Diagnostic Laboratory examining isolates from client animals to better understand the development of an-

“Traditional therapies are failing and we need new drugs. By looking at the biochemical pathways and understanding how these cell-to-cell communication molecules are put together, we may be able to develop new drugs that interfere with these pathways, breaking down the connection among the bacteria and preventing chronic infection.”

Americans Too Clean for Own Good? Research Raises Interesting Questions

tibiotic resistance. He has looked at everything from snakes to dogs and seen a high number of drug-resistant *Pseudomonas aeruginosa*, not surprising given the often experimental nature of antibiotic treatment of animal infections.

“Traditional therapies are failing and we need new drugs,” Dr. Schweizer said. “By looking at the biochemical pathways and understanding how these cell-to-cell communication molecules are put together, we may be able to develop new drugs that interfere with these pathways, breaking down the connection among the bacteria and preventing chronic infection.”

Dr. Schweizer hopes that he and his industrial collaborators one day will find a new drug that delivers health and hope to cystic fibrosis patients and others who suffer from chronic *Pseudomonas aeruginosa* infections. In this case, communication, or rather the disruption of communication, really is an essential matter of life and death. ■



The *Pseudomonas aeruginosa* bacteria.



Dr. Schweizer holds two examples of the hundreds of products with antibacterial properties that contain Triclosan.

Just about every American household contains at least one product with antibacterial properties. A virtual cornucopia of lotions, soaps, household cleaners, toys, shower curtains, utensils, pillow covers, and many other products promises to help protect the user from the disease and illness spread by bacteria. In an ironic twist, though, a Colorado State researcher has discovered that these products may have the potential to cause greater harm rather than good.

This discovery came as the result of research into the bacterium *Pseudomonas aeruginosa*. This opportunistic bacterium is pervasive in our environment, but causes infection only when faced with a compromised immune system. The infection is a huge problem for cystic fibrosis patients, who have a very difficult time fighting off the illness. Dr. Herbert Schweizer, an associate professor in the

Department of Microbiology, has been studying the bacterium and how it conducts cell-to-cell communication as well as its defensive reaction against antibiotics. It was while studying the bacterium’s response to antibiotics interfering with cell-to-cell communication that Dr. Schweizer discovered that the antiseptic chemical Triclosan sensitized the bacterium to antibiotics and even helped the bacterium become resistant to multiple antibiotics. Triclosan is the most common antibacterial agent used in antibacterial products.

“How this relates to the real world, we don’t know,” Dr. Schweizer said. “But it is something troubling at which we need to take a closer look. The concern is that antibacterial products may actually help create super-bacteria that are antibiotic resistant and cause even greater problems than the bacteria that occur naturally in our environment.”

Dr. Schweizer said that microbial flora and fauna exist in a delicate bal-

ance. The good and bad interact through a complex system of checks and balances that results in overall healthy population levels. Antibacterial products change that balance by indiscriminately killing off both good and bad susceptible bacteria, leaving behind the most resistant bacteria, which may not be such a good thing.

“We know that in the lab, Triclosan causes the *Pseudomonas aeruginosa* bacterium to become resistant not only to Triclosan but to a host of other antimicrobial agents, including antibiotics,” Dr. Schweizer said. “Part of this is due to the very structure of this bacterium. It is by nature highly resistant to antibiotics because of its multi-drug efflux system that readily pumps out antimicrobial agents before they can harm the bacterium. Triclosan contributes to speeding up this drug resistance process, something that could compromise the effectiveness of existing antibiotics and compound antibiotic resistance.”

Dr. Schweizer is working with two graduate students to further define the mechanisms of Triclosan resistance in bacteria. Though the work is in its early stages, many industry and consumer groups are watching closely. The market for antibacterial products is huge, and research that shows a downside to these products could result in a substantial financial impact. Nonetheless, because of the work of Dr. Schweizer and others, some European countries already have cooled to antibacterial products and are pulling many of them off market shelves.

“I think that these products do have a place, but maybe it’s in a hospital’s surgical suite and not our homes,” Dr. Schweizer said. “Properly washing your hands with a bar of Ivory soap is certainly adequate – we don’t need antimicrobials everywhere. A certain amount of exposure to bacteria is important to the development of our immune systems and to keeping healthy. It’s possible to be too clean.” ■

Smith Family Creates Living Legacy for Veterinary Education

Within his own family, Dr. Kenneth Smith charted a path to veterinary medicine that was followed by many of his kin. In October, that path widened with the creation of the Kenneth “Kenny” W. Smith Professorship that will enable others to pursue research and teaching in veterinary medicine.

The professorship will be awarded to a full faculty member specializing in small animal care at the Veterinary Teaching Hospital. Along with the honorary title, the award will provide the named professor with a stipend of about \$15,000 per

year that can be used to fund research, purchase equipment, or supplement salary costs. Dr. Kenny Smith’s son, James Smith, a retired medical doctor in Indianapolis, spearheaded the campaign for the professorship. A total of \$300,000 will be raised, with interest from the fund going to support the professorship.

“The Smith family has been an integral part of veterinary medicine here at the College for many years, and the creation of the professorship continues the family tradition of supporting excellence in education and investment in community,” said Dr. James Voss, dean,

“The Smith family has been an integral part of veterinary medicine here at the College for many years, and the creation of the professorship continues the family tradition of supporting excellence in education and investment in community.”

College of Veterinary Medicine and Biomedical Sciences. “Many of our students will remember having Dr. Smith as a professor and recount the positive impact he had on their lives. Through this profes-



*Clockwise from upper left:
Early photo of Dr. Kenneth Smith as he began his veterinary studies.
Early career photo of Dr. Smith (left) and a colleague administering a transfusion.
Dr. Smith listens to comments at his recent luncheon celebration.*



sorship, we not only can honor him, but continue his life's work as well."

Dr. Smith, who passed away on December 10th, was honored on Oct. 14 with a luncheon reception, presentation of a plaque, and announcement of the professorship. Among the 40 guests in attendance were his two younger brothers, Ed and Earl, also veterinarians and graduates of Colorado State, and the second and third generations of Colorado State Smith veterinarians, including the most recent graduate, Smith's grand-niece Stephanie Pratt, who graduated with her D.V.M. in May. In all, seven Smiths and two Smith in-laws are graduates of the Professional Veterinary Medical program at Colorado State.

This family tradition comes from a humble start. Dr. Kenny Smith, the first of seven children, was born in 1910 in the small town of Minturn, just west of Vail. Dr. Smith graduated from Colorado State (then Colorado A&M), followed closely by his brothers, and worked as a large

animal veterinarian before changing his practice and becoming one of the first veterinarians to specialize in small animal medicine. In 1937, he returned to Colorado State as a faculty member and then left in 1946 to pursue private practice. In 1958, he again returned to Colorado State and taught at the school until his retirement in 1976.

Among Dr. Smith's many contributions to veterinary medicine was his role in the establishment of the American College of Veterinary Surgery Board that continues to certify veterinary surgical specialists today. ■



Clockwise from upper left:

Dr. Kenneth Smith and family members at the luncheon reception on October 14.

Early career photo of Dr. Smith examining a patient.

Three generations of Smith veterinarians include Dr. Kenneth Smith, seated, and clockwise from left, Kathy Dobesh, Kenneth L. Smith, Earl "Pinky" Smith, Edward J. Smith, Tom E. Smith, and Stephanie Pratt.

Equine Reproduction Short Courses

Equine Reproductive Management and Artificial Insemination

January 4-7, 2001; January 18-21, 2001

Fee: \$750.00

Enrollment Limit: 72

Continuing Education Hours: 24 Lecture hours; 12 Laboratory hours

Instructors: Drs. J.E. Bruemmer, E.M. Carnevale, P.M. McCue, P.D. Siciliano, E.L. Squires, and graduate students

Course Description: This course is designed for horse owners and breeders wishing to increase the reproductive efficiency of their horses. The four-day course offers state-of-the-art technology in equine reproductive management. Each course includes 24 hours of classroom instruction and 12 hours of laboratory work in mare and stallion management, seminal collection and evaluation, artificial insemination, and care of the pregnant mare and neonatal foal. Participants are encouraged to actively participate in the collection and evaluation of semen and insemination of mares. Topics to be covered include anatomy and physiology of the mare and stallion genital tract; hormonal relationships and fertility; seminal collection and evaluation; techniques of artificial insemination; factors affecting sperm production and output; sexual behavior of the stallion; training a stallion to a phantom; hormonal control of the estrous cycle and pregnancy; care of the pregnant, foaling, and postpartum mare; and nutrition of the stallion and pregnant mare. Please note that transrectal palpation of the mare will not be taught in this course.

Techniques for Handling and Utilizing Transported Cooled Equine Spermatozoa

January 8, 2001; January 22, 2001

Fee: \$300.00

Enrollment Limit: 72

Continuing Education Hours: 8 Lecture hours; 4 Laboratory hours

Instructors: Drs. J.E. Bruemmer, E.M. Carnevale, P.M. McCue, P.D. Siciliano, E.L. Squires, and graduate students

Course Description: This course is designed for anyone interested in learning the techniques involved in shipment of equine spermatozoa. In addition to lectures, hands-on laboratory sessions will provide the opportunity for registrants to actively participate. Extensive experience in seminal collection, evaluation and insemination procedures, or attendance at an Equine Reproductive Management and Artificial Insemination short course at Colorado State University is highly recommended as a prerequisite to this course. Topics to be covered include response of spermatozoa to cooling; preparing semen for shipment; Equitaner (Hamilton-Thorn) System; on-the-farm applications and results of shipped semen; preparation of mares for cooled and frozen semen; and latest research results.

Techniques for Handling Transported Frozen Equine Spermatozoa

January 9, 2001; January 23, 2001

Fee: \$500.00

Enrollment Limit: 24

Continuing Education Hours: 4 Lecture hours; 4 Laboratory hours

Instructors: Drs. J.E. Bruemmer, E.M. Carnevale, P.M. McCue, P.D. Siciliano, E.L. Squires, and graduate students

Course Description: This course is designed for anyone seriously interested in learning the technique involved in freezing equine spermatozoa. In addition to lectures, hands-on laboratory sessions will provide the opportunity for registrants to actively participate in the freezing and thawing of semen. Extensive experience in seminal collection, evaluation and insemination procedures, or attendance at an Equine Reproductive Management and Artificial Insemination short course at Colorado State University is highly recommended as a prerequisite to this course. Topics to be covered include response of spermatozoa to freezing; preparation of semen for freezing; extender preparation, proper handling, storage, and thawing procedures; post-thawing evaluation of semen; preparation of mares for frozen semen; and latest research results.

Lameness

Current Topics in Lameness, Nutrition, and Therapeutic Options
TBA

Instructors: Drs. C.W. McIlwraith, A. Schoen, P.D. Siciliano, and G.W. Trotter

Course Description: This is an exciting new course designed to answer the questions most often asked by horse owners. Rather than focusing on one subject, a number of controversial areas will be covered by experts in the field. Topics will include the effectiveness of nutraceuticals and oral glycosaminoglycans in treating lameness, use of dietary ergogenic aids in the equine athlete, nutritional influence on DOD, and new treatment for lameness. Additionally, guest speaker Dr. Allen Schoen, who literally wrote the book on alternative therapies, will discuss several topics in this area.

For registration information, please contact:

*Short Course Coordinator
Equine Sciences Program
Colorado State University
Fort Collins, CO 80523-1679
(970) 491-8509 or 491-8373
Fax: (970) 491-8419*

C ontinuing Veterinary Medical Education

Special Programs for Veterinarians

Small Animal

Dates individually arranged – \$500 per week,
\$450 per week CVMA members
40 hours of CE

Cardiac Ultrasound

Communicating Effectively with Emotional Clients

Critical Care and Emergency Medicine

Small Animal Surgery

Food Animal

Dates individually arranged – \$150 per day
8 hours of CE

Bovine Calving Management

Reproductive Management

Male Reproduction

Bovine Nutrition

(or combinations above)

Technician Programs

Dates individually arranged – \$200 per week
20 hours of CE

Small Animal Surgical Assisting

Large Animal Surgical Assisting

Critical Care and Emergency Medicine

Clinical Pathology and Diagnostic Parasitology

Anesthesia

Necropsy

Programs can be customized to meet individual needs.

For further information and to set up special veterinarian or technician programs, call 1-800-457-9715.

E-mail denglebe@vth.colostate.edu and check our Web site for updated information at www.cvmb.colostate.edu/clinsci/ce.

All continuing education courses have enrollment limitations. If the minimum enrollment is not reached three weeks prior to the scheduled date, the course will be canceled. For information on additional equine course offerings, please see page 14 and/or call (970) 491-8509.

Colorado State University 62nd Annual Conference for Veterinarians

January 6-8, 2001

Colorado State University Lory Student Center

Registration: \$225 prior to December 15, 2000

\$260 after December 15, 2000

Variety of Topics will be discussed in Small Animal, Large Animal, Equine,
and Exotics.

Colorado State University 11th Annual Conference for Veterinary Technicians

January 7, 2001

Colorado State University Veterinary Teaching Hospital

Registration: \$65 prior to December 15, 2000

\$80 after December 15, 2000

One full day of lectures and labs especially for veterinary technicians.

Call 1-800-457-9715 for more information.

Dr. Kimberling Honored

The American Association of Small Ruminant Practitioners (AASRP) recently honored Dr. Cleon Kimberling for his work. The award came at the association's annual meeting and board of directors meeting in July. The association met during the American Veterinary Medical Association's 137th Annual Convention in Salt Lake City, Utah.

Dr. Kimberling was selected for the George McConnell Award (also known as the Small-Ruminant Veterinarian of the Year) for his contributions to the veterinary profession and advancement of the practice of small-ruminant medicine. Dr. Kimberling, a professor in the Department of Clinical Sciences at the College of Veterinary Medicine and Biomedical Sciences, is an active member of the AASRP and has represented the small-ruminant association on several AVMA councils. ■

Dr. Salman Receives APHIS Award

The Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) has presented to Dr. Mo Salman its APHIS Award. The award was given at the U.S. Animal Health Association's (USAHA) annual meeting held October 22-26 in Birmingham, Alabama.

Dr. Salman, a professor in the Department of Environmental Health at Colorado State University, was recognized because of his long involvement with key APHIS programs including tuberculosis and brucellosis as well as vesicular stomatitis, risk analysis of infectious animal diseases, and trade. He has been an advisor and mentor to many current and former APHIS employees. During his tenure as chair of the National Animal Health Information Systems Committee of USAHA, Dr. Salman worked to help APHIS develop a more cohesive national approach to monitoring animal disease.

Dr. Salman came to Colorado State University in 1984 as an assistant professor in the College of Veterinary Medicine and Biomedical Sciences. He became a full professor in 1994 and, in 1995, began serving as the Section Chief of Epidemiology in the Department of Environmental Health. He is a diplomat of the American College of Veterinary Preventive Medicine and a Fellow of the American College of Epidemiology. ■

College of Veterinary Medicine and Biomedical Sciences
Fort Collins, Colorado 80523-1601

**Colorado
State
University**