AAVPT Newsletter
American Academy of Veterinary Pharmacology and Therapeutics
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From The President

FDA's Veterinary Medicine Advisory Committee

The FDA Veterinary Medicine Advisory Committee (VMAC) met January 22-24, 2002 to discuss two issues: 1) establishment of import tolerance for nonapproved drugs and 2) whether pathogen load studies are necessary for antimicrobial approvals. The FDA typically asked multiple specific questions of the panel. The following is offered as my synopsis of those issues and the general VMAC responses. Note that the following are not necessarily the views of the FDA.

1. Import tolerances. As part of the Animal Drug Availability Act of 1996 it was specified by Congress that the FDA should establish tolerances to allow importation of products containing residues of drugs not approved for use in food animals in the U.S., provided evidence existed to establish said residues as safe. The FDA was seeking advice on what methods should be used to establish those tolerances. In that regard, two main approaches were reviewed:
   a) It would usually be possible to establish tolerances by review of toxicity studies in a manner currently employed by FDA for domestic drug approvals. The committee termed this the Food Safety approach.
   b) When setting tolerances some countries take into account "Good Agricultural Practices". The tolerance value in such cases is a reflection of how the drug is used. Exceeding that value implies that the drug is being used in an extra-label manner. Typically tolerance values set in this manner are lower than those set using the Food Safety approach. As some countries have already set their tolerances on this basis, and since these values are lower (more conservative) than that of the food safety approach, the argument was made that the US should adopt this approach in the interest of having only one tolerance value for that drug-product combination (international harmonization of import tolerances). The committee termed this the Good Agricultural Practices approach.

- It was the overwhelming opinion of the VMAC that import tolerances should be based on the Food Safety approach similar to that currently employed by the FDA. While the concept of international harmonization taking into account Good Agricultural Practices is laudable, the difficulties in defining those practices as well as the prospect of facing dual tolerance values should a foreign drug eventually seek domestic approval made this latter approach inadvisable. The committee noted that some form of assurance that the drug producing these residues is manufactured under GMP-like conditions should be required.

Other issues dealing with import tolerances:

- Tolerances are typically set for sponsor specific products and not for the chemical entity. The FDA asked if there were methods whereby residues could be identified as associated with a specific product. The VMAC could think of no practical methodology to accomplish this task.
- The FDA sought guidance as to when the public should be made aware that an import tolerance was under consideration. The VMAC felt that an initial review by the FDA was first in order to determine the completeness of the submission package. If said package was deemed adequate to determine a tolerance the public should be made aware that establishment of an import tolerance was under consideration. This

Public notification should occur via the Federal Register, the CVM web site, and other avenues as may be appropriate. That notification should be in a timely manner to allow for adequate public feedback and consideration of public concerns prior to ruling on the import tolerance.

- The FDA was seeking information on whether setting of these import tolerances could have a significant environmental impact that might disallow an exclusion relative to the National Environmental Policy Act. The VMAC could think of no instances relative to residues within animal products that would have a significant environmental impact.

3. Pathogen load studies. FDA has required by regulation (21 CFR 558.15) that "pathogen load" studies (more specifically, *Salmonella* shedding studies) for any antibiotic being used for subtherapeutic purposes in animal feeds (use beyond 14 days). These studies were to address the issue of whether subtherapeutic administration of the drug led to an increased number of *Salmonella* in the GI tract of the target species (and hence an increased risk of carcass contamination at slaughter). In addition, the "558.15 studies" attempted to evaluate whether such drug use led to increased resistance to antimicrobials. The FDA was seeking advice as to whether the pathogen load studies in particular should continue to be applied to subtherapeutic use applications and whether they should be expanded to include therapeutic use applications.

   Presentations by a variety of speakers reviewed the benefits and flaws of pathogen load studies. An outside consulting group, on behalf of the FDA, also conducted a literature review and those results were provided. Major limitations of the 558.15 study design were apparent and included: age groups and husbandry practices not representative of drug use conditions, inordinately high bacterial challenges, not studying the effect of the drug withdrawal time frame where pathogen numbers might reduce or stabilize, and an inability to accurately quantify *Salmonella* numbers based on present technology. The literature review and the review of 558.15 studies failed to show consistent evidence of antimicrobial use causing increasing pathogen numbers and in fact more commonly showed pathogen number reductions. No evidence of increased resistance due to drug use was found in any of the 558.15 studies nor the reviewed literature. (Although most study designs from the literature did not specifically address this issue.)

   - While the concept of requiring pathogen load studies for drug approval may seem reasonable in theory, the VMAC felt that, as presently designed, pathogen load studies provided no consistent value in protecting the public health. Several members commented that resources would be better spent relative to antimicrobial resistance issues rather than pathogen load determinations. It was the majority opinion (ten members) of the VMAC that such studies should be discontinued for sutherapeutic drug approval purposes and that they not be incorporated into the therapeutic drug approval process. Though acknowledging the limitations of the present system, two members offered a dissenting opinion stating that they felt pathogen load studies should be continued in some form.

Respectfully submitted
Cory Langston, DVM, PhD, Dip. ACVCP
Chair, FDA VMAC and President, AAVPT
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Secretary-Treasurer Report

Well, 2002 is well underway. I hope everyone is getting through the winter. The weather in Illinois here has remained magnificent – we have not had any snow since early in November of last year. I have never experienced such a mild winter. Hope you winter has not been too unpleasant.

The treasury shows a balance of approximately $20,165 as of February 2002. I am currently in the middle of getting the 2002 dues and journal subscriptions and have received over half from the membership. I would like to thank everyone who has returned their dues payment for 2002 and remind those who have not to try to get their checks to me. To date, I have received dues and/or journal subscriptions from 57 members. I would request those who want to continue their subscription to the journal to get their payment in to me as soon as possible. Final payment to the publisher needs to be made soon. I have received payment for 33 subscriptions. I would like to thank **T.Clark, G. Coppoc, J. Gloyd, A. Jernigan, S. Malik, A. Neal, M. Papich, J. Clark, J. Oliver, D. Kochevar, C. Langston, K. Varma,** and **R. Ehrich** for their generous donations to the award fund.

Our membership currently stands at 215 members (140 Fellows, 3 Distinguished Fellows, 31 Emeritus Fellows, 31 Associate Fellows, and 9 student members). We welcome one new Fellow, **Dr. Sara Marley**.

I am asking again if any of you have a copy of either of copies of the first two symposia – the one held at LSU (1978) and the one at Philadelphia (1980) – I would like to ask for donations to our archive. Dr. Gary Koritz has kindly donated his copy from the 1978 symposia. If you have a couple and would be willing to donate them, please give me a call (217-359-0661) or email me at cdavis@shout.net. I would really like to get at least one copy or each for our archives.

Debbie Kochevar continues as our website liaison and continues to work with our new webmaster (Brett Rose) at Texas A&M. The website continues to progress and we encourage you to contact with you thoughts on how it might be improved. There is a place on the website for your comments and we encourage you to send us suggestions, comments or corrections.

In addition to your dues, I would ask you to include any changes you would like to make to your directory listing on the dues form. Remember to let us know if you have any change in your mailing, phone, fax or email information. Please check the website to verify your current information. If you do not remember the ID and password, please email me. I will pass it on to you. If you see any errors or omissions, please let me know.

I continue to look forward to serving as your Secretary-Treasurer and I encourage you to contact me concerning any questions or any AAVPT business. I hope everyone has a wonder spring.

Carol Davis
Secretary/Treasurer
(cdavis@shout.net).

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AAVPT Biennial Symposium 2003

A committee has been formed to develop a program and to arrange a venue for the next Biennieal Symposium: Randy Lynn (IDEXX), Ralph Claxton (Novartis), Terry Clark (Pfizer) and myself. We invite interested members to volunteer to join us in planning the Cutting Edge Symposium. Please send to any member of the Symposium committee your suggestions for Speakers who can present their knowledge of the cutting edge of veterinary pharmacology.

The symposium will be held in Charlotte, North Carolina, from June 3 - 4, 2003, immediately preceding the ACVIM Annual Forum on June 4 - 7, 2003. People who wish to nominate for the Program Committee or who wish to recommend speakers and speaker topics, should contact Ted Whittem AAVPT President-Elect and Chair, 2003 Symposium Committee (mailto:tedw@jurox.com.au)

2002 AAVPT/ACVCP Symposium

The AAVPT/ACVCP Annual Scientific Symposium and Annual Meeting will be once again held in conjunction with the ACVIM Annual Forum, this year to be held in Dallas May 29-June 1. The AAVPT/ACVCP morning session this year will focus on clinical trial design, regulation, implementation, and evaluation. The afternoon session will include therapeutic discussions about parvovirus, parasitology, oncology, and pain and inflammation. We will be welcoming Drs. Smothers, Oeller, Heit,

Wang, Otto, Blagburn, Vail, and Martinez to the podium for their insights in these areas. Please plan on attending not only the AAVPT/ACVCP sessions, but other parts of the ACVIM Forum as well.

For the first time this year, a $500 award will be presented to the best resident/graduate student abstract (poster or oral presentation) presented at the Forum. To be eligible for the award, a candidate must be in a training program leading toward certification by the ACVCP. To certify eligibility, candidates should send a copy of their accepted abstract signed by their mentor to the following address by May 1, 2002:

ACVCP Scientific Programs Committee
c/o Terrence P. Clark, D.V.M., Ph.D., DACVCP
Veterinary Medicine - Pharmaceutical Clinical Development
P.O. Box 8200-40
Pfizer Global Research and Development
Eastern Point Road
Groton, CT 06340

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Meeting Announcement

The AAVPT has a joint workshop coming up with the American Association of Pharmaceutical Scientists and the Controlled Release Society

The American Association of Pharmaceutical Scientists (AAPS) has announced the following upcoming workshop: Collaboration in the Research and Development of Veterinary Pharmaceuticals, co-sponsored with the Controlled Release Society and the American Academy of Veterinary Pharmacology and Therapeutics. This is a first of its kind event bringing together scientists from the veterinary pharmacology and pharmaceutical science research areas. Participants in this AAPS Workshop will share knowledge and practical experiences; learn important concepts and applications; and, interact with professionals from industry, academia, and the FDA. Workshop attendees can expect to better understand the research, current issues, future objectives and directions in veterinary medicine. This exciting Workshop will be held May 6-8, 2002 at the Anderson Center for Professional Education, in St. Charles, IL. Go to www.aapspharmaceutica.com/meetings or call 703-243-2800 for the most up-to-date meeting and registration information.

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Membership Committee

Despite exciting advances in veterinary pharmacology, the AAVPT continues to face a decline in membership. As a consequence of this decline, it is becoming increasing difficult to meet our objective of providing "a powerful force in the promotion of the science of veterinary pharmacology and therapeutics". Consequently, to remain a vital organization, we must identify mechanisms for recruiting new members and for increasing the level of involvement of the existing membership.

The first step in this process is to examine reasons why individuals actively participate in any professional organization. In that regard, the following attributes appear to consistently be of high-level importance:

1. Networking opportunities: exchange of ideas, research collaborations, job opportunities, etc.
2. Proactive efforts: development of workshops, position papers, research opportunities, etc. that can influence the direction of science and drug regulation.
3. Informative newsletters: the exchange of scientific current events through newsletters or emails.
4. Continuing education: opportunities for the working professional to keep current in an ever-changing scientific environment.
5. Training: opportunities to reach young scientists with state-of-the-art information through both predoctoral and postdoctoral training efforts.

6. Dialogue: opportunities to exchange opinions and influence drug use and regulatory policies.

While these items are consistent with the AAVPT objectives, reductions in membership and overwhelming job responsibilities have substantially reduced the number of innovative activities we have to offer. Therefore, to refresh the vibrancy of this organization, the following initiatives are being considered by the Executive Council:

1. The creation of subcommittees based upon areas of specialization:
    i. Manufacturing Technologies
    ii. Clinical Pharmacology
    iii. Pharmacokinetics/Bioequivalence
    iv. Human Food Safety/Public Safety
    v. Microbiology

    Members would identify their preferred area of focus. Subcommittee chairs would work with their members to select a topic that will serve as their focus of discussion for that year. Each group would be responsible for writing a yearly "article" for AAVPT Newsletter, and these articles could range from a summary of some of the year's most important literature and events, white papers, problems encountered/unresolved issues, pivotal regulatory activities, etc. These articles would then serve not only as a history of events within the individual areas but also provide a springboard for future meetings, JVPT manuscripts, lectures, educational CD's, etc.

2. Develop grassroots training opportunities through academic graduate programs. In this regard, the activities of the Educational Committee will be vital to attracting new members. For example, the AAVPT could develop educational programs (CD's, web-based lecture series, workshops, etc). When "buying" or "attending" one of these educational offerings, a one-year membership would be included in the "package". Please note that years ago, this is how the American Association of Pharmaceutical Scientist, which is today a very large and very powerful organization, attracted new members.

3. Initiate a web-based discussion group, either independently through the AAVPT website or as a portal that links with the soon-to-be-available Animal Health Consortium discussion group.[1] By having an AAVPT portal, we can maintain a log of the questions raised by our membership to ensure that the AAVPT keep appraised of what our members consider to be "hot topics".

4. Revise our membership directory so that individuals are listed not only alphabetically but also by type of employment (government, academia, private consultant, regulated industry) and area of expertise. This will facilitate the networking of AAVPT members, and may be particularly helpful to graduate students or to those individuals who are new to the profession and our organization.

Finally, we need to revise our membership forms such that they encourage rather than discourage applications. The need to include a curriculum vitae and letters of recommendation can be burdensome. Therefore, a simplified application process needs to be developed.

Clearly, the Membership Committee faces multifaceted challenges as we work at the materialization of these initiatives. That is where everyone's contribution is necessary. There are many opportunities for involvement, and hopefully this will not become the effort of a few. With that in mind, it is essential that people express a willingness to volunteer their time and effort. Please forward any comments, suggestions, or offers to support this effort to Marilyn Martinez at MMartin1@cvm.fda.gov.

- Cyril Clarke (mailto:Clarke@okstate.edu)

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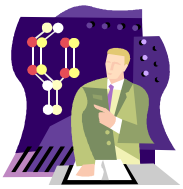
[1] The Animal Health Consortium (AHC) is an international E-based site that will connect animal health professionals throughout the world. The AAVPT will be a member of this consortium. Therefore, all AAVPT members will be receiving an EMAIL from this group within the next few months.

News from the Pharmaceutical Industry



The Animal Health Institute (AHI) reports some interesting trends in the animal pharmaceutical industry. Worldwide, animal health sales total $16.1 billion. The animal health industry in the United States totaled $4.2 billion in 2000. In the U.S., companies spend approximately 11-12 percent of their annual sales revenue on research and development. In 1993, it was 17.5 percent. Two trends are clear: R&D as a percentage of sales is trending down, and more of the R&D dollar is being spent on "defensive" rather than "innovative" research.

The decrease in R&D spending is attributable to an uncertain regulatory environment. Development of a new animal drug takes 7-10 years, and costs $80-100 million dollars. A product is considered a "blockbuster" in animal health with sales of $50-100 million. The vast majority of animal health products - some 85 percent - have sales under $1 million.

Industry consolidation: Worldwide, the top 10 companies (sales) had 30 percent of the market in 1980; in 1995 it was 56 percent and in 2000 it was 65 percent. Another way of looking at consolidation is number of companies with membership in AHI:

1985	54
1990	38
1995	25
2002	17

Respectfully submitted,
Dave Kowalczyk

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The Washington Scene

FDA extends comment period for import tolerances ANPRM

FDA extended the comment period for the advance notice of proposed rulemaking (ANPRM) on import tolerances to March 11, 2002. The ANPRM first appeared in the August 10, 2001, Federal Register.

According to the ANPRM, FDA intends to propose a regulation for establishing import tolerances, and solicited comments on issues related to the implementation of the import tolerances provision in section 4 of the Animal Drug Availability Act of 1996 (ADAA).

The ADAA authorizes FDA to establish drug residue tolerances (import tolerances) for imported food products of animal origin for drugs that are used in other countries, but that are unapproved new animal drugs in the U.S. Food products of animal origin that are in compliance with the import tolerance will not be considered adulterated under the Federal Food, Drug, and Cosmetic Act and may be imported into the United States.

Written or electronic comments on the ANPRM should be submitted to the Dockets Management Branch (HFA-305), Food and Drug Administration, 5630 Fishers Lane, Room 1061, Rockville, MD 20852, by March 11, 2002. Electronic comments should be submitted to http://www.fda.gov/dockets/ecomments. Comments should reference Docket No. 01N-0284.

CVM amends rules on ADE records and reports

CVM is amending the requirements, effective August 5, 2002, for records and reports of adverse

experiences (ADE) and other information for approved new animal drugs.

This interim final rule more clearly defines the kinds of information to be maintained and submitted by new animal drug applicants for a new animal drug application (NADA) or an abbreviated new animal drug application (ANADA). In addition, the interim final rule revises the timing and content of certain reports to enhance their usefulness. The regulation will provide for protection of public and animal health and reduce unnecessary record keeping and reporting requirements.

This interim final rule was published in the February 4, 2002, Federal Register and may be found on the FDA Home Page. Single copies of the guidance may be obtained by writing to the Communications Staff at the address listed above.

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Meeting Announcements

• The International Conference on Antimicrobial Agents in Veterinary Medicine (AAVM) will be held in Helsinki, Finland, August 4-8, 2002. Topics including clinical use of antimicrobial agents, antibiotic use in farm animals and companion or racing animals, extralabel use, pharmacokinetics and residues of antimicrobials will be presented. Abstracts will be due April 1, 2002. For more information, visit http://www.aavm2002.com.

Job Postings

¶ The Center for Veterinary Medicine/Food and Drug Administration seeks veterinarians to work in the Office of New Animal Drug Evaluation in Rockville, MD. Use your pharmacology and internal medicine knowledge to evaluate toxicology and clinical trials submitted by pharmaceutical companies to support new canine, feline, and equine drug approvals. You will review research proposals and final study reports to assess scientific validity. You will interact frequently with pharmaceutical companies and have a significant impact on the development of new animal health products. Critical thinking, good writing skills, and ability to work as part of a multi-disciplinary scientific team are essential. Requirements are a DVM degree and at least one year of current clinical practice experience. Starting salary is GS-12 ($55,694 - $72,400) with promotion potential to a GS-13($66,229 - $86,095) after one year of successful job performance. Relocation expenses will not be paid. Please contact Dr. Melanie Berson at mberson@cvm.fda.gov or 301- 827-7543 for further information.

¶ Pfizer Veterinary Medicine in Groton, CT is recruiting for the position of Clinical Research Investigator. A DVM/VMD degree is required with at least two years experience as a clinical veterinarian or related experience in an area related to veterinary pharmaceutical development. Specific responsibilities for the position include: (1) preparation of study protocols, including data capture forms, and study reports; (2) liaise with investigators responsible for conducting field and laboratory studies to ensure active enrollment, accurate data capture and protocol and regulatory compliance; (3) liaise with participating contract research organizations (CROs) to ensure consistency in communications with investigators, adherence to Pfizer standard operating procedures (SOPs) and regulatory compliance; (4) assist in maintenance of study budgets and timely payments to investigators/CROs; (5) ensure correct and timely entry of study data into the database; (6) ensure that study files are constructed and maintained in accordance with SOPs and regulatory requirements; and (7) maintain up-to-date awareness of medical and therapeutic issues for the animal population used in assigned studies and on a broader scientific front. Position may require travel to study sites for up to 50% of time. For information, please contact: Terrence P. Clark, D.V.M., Ph.D., Dip. ACVCP Veterinary Medicine - Pharmaceutical Clinical Development, P.O. Box 8200-40, Pfizer Global Research and Development, Eastern Point Road Groton, CT 06340.

¶ Jurox is a 100% Australian owned research based Company operating in the Animal Health and Rural Industries. New products currently in development will result in substantial sales growth in the near future. Our products are sold to Veterinarians, Consumers and Rural merchandise outlets. The Company spends over 12% of its revenue on research in Australia. Research Programme Manager Jurox has a vacancy for a veterinary scientist to work in our Research and Development department. This opportunity will suit a veterinarian who wishes to develop and apply skills in research management. This is a permanent fulltime position located in our Rutherford Facility in the Hunter Valley of NSW. The position includes responsibility for research and development of traditional pharmaceutical products and novel biotechnology-derived therapeutic products, working within and leading teams which include chemists, veterinarians, agricultural scientists and marketing personnel. Ideal applicants will have a degree in veterinary science and either further research experience or alternate post-graduate qualifications in any discipline. Knowledge of GLP and GCP, modern biotechnology methods and statistics and demonstrated skills in scientific writing would be an advantage. An excellent salary and incentive package will be negotiated. Applications or requests for further information should be sent to Dr. Ted Whittem, 85 Gardiners Road, Rutherford 2320, NSW, phone +61 (0)2 4931 8229 mailto:tedw@jurox.com.au.

¶ Research Assistant Professor of Pharmacology The Center for Chemical Toxicology Research and Pharmacokinetics (CCTRP) at North Carolina State University (NCSU) (http://cctrp.ncsu.edu) in the Department of Farm Animal Health and Resource Management (FAHRM) is primarily involved in assessing percutaneous absorption and cutaneous toxicology of chemical mixtures and the prediction of drug residues in tissues of food animal origin. A primary task of the center is management of the Food Animal Residue Avoidance Databank (FARAD) Eastern Regional Access Center at NCSU-CVM. The incumbent to this position will manage and respond to food animal residue queries that are submitted to FARAD by veterinarians, producers, and other national and international agencies, as well as promote FARAD at regional and national veterinary meetings. This individual will also be involved in research areas relevant to the research mission of the CCTRP and teaching in the FAHRM Dept. Allocation of effort in this non-tenure track position is best described as 60% FARAD service, 30% Research, and 10% Teaching. Individuals must have a. D.V.M. Additional graduate training in pharmacology/toxicology and/or residency training with eligibility for board certification in a relevant discipline (e.g., DABVT, DACVCP). Candidates with specific expertise & experience in one or several of the following areas are encouraged to apply: drug metabolism; HPLC; statistics; pharmacokinetic modeling, and risk assessment. Candidates will be required to work independently on projects pertinent to the mission of the Center for Chemical Toxicology Research and Pharmacokinetics (CCTRP). The position offers competitive salary and benefits. NCSU is located just minutes from Research Triangle Park, an internationally recognized center for biomedical research. Substantial collaborations between the CCTRP, neighboring Universities, national research laboratories, and major pharmaceutical companies are on going. Technical questions may be directed to Dr. Jim Riviere (mailto:Jim_Riviere@ncsu.edu). Applicants should provide the following: curriculum vitae, list of publications, along with three references and a concise statement of research accomplishments and future plans. Application review will begin on 04/30/2002. Position open until filled. Please send the above information to: Ms. Vickie Vick, Administrative Assistant to the Director, Center for Cutaneous Toxicology and Residue Pharmacology, North Carolina State University, Raleigh, NC 27606. Individuals with disabilities desiring reasonable accommodations in the application process should notify Vickie Vick, CCTRP, 919-513-6398, FAX 919-513-6358, TTY 919-515-9617.

Obituary

We lost one of our oldest Fellows, Dr. Ray S. Smith on November 5, 2001. Dr. Ray became a Fellow in 1978 when the Academy was first organized and became an Emeritus Fellow 1981 upon his retirement. Dr. Ray taught at The Ohio State University College of Veterinary Medicine for more than 25 years. He began his long association with OSU in 1955 as an instructor teaching veterinary pharmacology and physiology, the year he received his DVM degree. In 1963, Dr. Ray became one of the first to earn a Ph.D. degree in the OSU Department of Physiology. Dr. Ray was a chemist by heart, and loved physiology. He taught veterinary clinical sciences and veterinary physiology and pharmacology eventually becoming a full professor. In addition to his teaching responsibilities, Dr. Ray was also Director of Pre- and Post-Race Testing Laboratories at Ohio State from 1969 to 1981. He helped establish testing facilities at both Scioto Downs in Columbus and Northfield Park in Cleveland. After retirement in 1981, Dr. Ray pursued his passion for photography and his interest in antique cameras and development techniques. Dr. Ray also kept busy working with his son, Dr. David Ray, an orthodontist in Westerville, Ohio. He helped with radiology and chemical hygiene in the practice. He is survived by his wife, Diane, and their three children, Kathleen, David and Elizabeth.

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Journal of Veterinary Pharmacology and Therapeutics

Your *Journal of Veterinary Pharmacology and Therapeutics* continues to do well. You will notice a new look in 2002 as the publisher, Blackwell Press, revitalizes its line of journals. The Chapter of Veterinary Pharmacology of the Australian College of Veterinary Scientists is in the process of adopting JVPT as their official journal. This should increase readership and impact. I urge you to submit your pharmacology studies to your journal, as this is the only way it will serve its function to publish the best veterinary pharmacology research available.
Our article submission rate was the same as last year, with a final acceptance rate holding at 2/3. We need to try and increase submissions, especially in areas of clinical pharmacology. The average turnaround time for initial review holds at about two months, although this can be longer around holidays and vacation times (as our member reviewers know!). If you have any desire to contribute an in-depth review article, which will be refereed by our editorial board members, please get in touch with me to discuss topics. Finally, subscriptions keep this journal in print. Please make every effort to insure that your institution maintains a subscription. Also visit the publisher's website (www.blackwell-science.com) for additional information.

I must stress that this is your journal and only with your active involvement, in the form of article submission, subscription and aiding the review process, will it thrive.

Thanks,

Jim Riviere, Editor
(Jim_Riviere@ncsu.edu).

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