

Letters to the Editor

Ultrasound-guided endoscopic diode laser ablation in dogs with transitional cell carcinoma

Drs. Cerf and Lindquist are to be complimented for their study¹ on the use of ultrasound-guided endoscopic diode laser ablation (UGELAB)¹ to palliate urinary tract obstruction in dogs with transitional cell carcinoma (TCC) of the lower urinary tract. However, additional information is required to fully understand the risks and potential benefits of palliative UGELAB in dogs with TCC. Because survival time was the main endpoint of the study, it is essential to know what other treatments were given before and after UGELAB. Because such treatments have been shown to affect survival time,²⁻⁴ survival time data cannot be adequately interpreted without this information. In our experience at Purdue University, including treating 165 dogs with TCC in the past 5 years, it is not at all uncommon for dogs with TCC (even with extensive urethral and trigonal involvement) to live well beyond a year with only medical treatment. This is especially true when dogs are treated with multiple sequential drug protocols. Even the response to cyclooxygenase (COX) inhibitors alone can be dramatic, with pet owners reporting marked reductions in stranguria and dysuria within 24 to 48 hours after the initiation of treatment, and administration of COX inhibitors alone can induce partial or complete remission in dogs with TCC.^{2,3} The inclusion of COX inhibitors in the UGELAB protocol to reduce pain and inflammation is understandable, but it makes interpretation of the potential benefits of UGELAB difficult.

The potential benefits of any medical procedure must be weighed against the risks. Although adverse events associated with UGELAB were reported to be uncommon, perforation of the bladder, when it does occur, is very serious and

even potentially life-threatening. Surgical repair is usually indicated. Also, the release of cancerous cells in the urine at the time of perforation could lead to intra-abdominal TCC, and TCC that has escaped the urinary tract does not typically respond well to treatment.^{2,5} There is a fine line between removing a sufficient amount of tissue with a laser and cutting too deep and perforating the urinary tract.

Given the risks associated with laser ablation, the typical approach at Purdue University for dogs with urethral obstruction secondary to TCC is nonsurgical placement of urethral stents. Laser procedures are used less commonly. Either procedure is reserved for carefully selected patients. Because most dogs with TCC have stranguria,^{2,3} stranguria alone is not an indication for laser ablation or stent placement, especially if COX inhibitors and other drugs have not yet been evaluated in the dog. To characterize the urethral obstruction, bladder size is measured ultrasonographically before and after the dog attempts to urinate. Limited obstruction could be treated with drugs, whereas complete and near-complete obstruction usually require another immediate intervention. The outcome of 19 dogs with TCC that had urethral stents placed at our institution⁵ has been better than the outcome described in a previous report.⁶

In conclusion, in dogs with TCC, maintaining urine out-

flow is essential to life. A full understanding of the potential risks and benefits of UGELAB and other procedures to restore urinary tract patency requires further study.

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1. Cerf DJ, Lindquist EC. Palliative ultrasound-guided endoscopic diode laser ablation of transitional cell carcinomas of the lower urinary tract in dogs. *J Am Vet Med Assoc* 2012;240:51-60.
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The author responds:

Acknowledging Dr. Knapp's substantial expertise in the treatment

Instructions for Writing a Letter to the Editor

Readers are invited to submit letters to the editor. Letters may not exceed 500 words and 6 references. Letters to the Editor must be original and cannot have been published or submitted for publication elsewhere. Not all letters are published; all letters accepted for publication are subject to editing. Those pertaining to anything published in the *JAVMA* should be received within one month of the date of publication. Submission via e-mail (JournalLetters@avma.org) or fax (847-925-9329) is encouraged; authors should give their full contact information, including address, daytime telephone number, fax number, and e-mail address.

Letters containing defamatory, libelous, or malicious statements will not be published, nor will letters representing attacks on or attempts to demean veterinary societies or their committees or agencies. Viewpoints expressed in published letters are those of the letter writers and do not necessarily represent the opinions or policies of the AVMA.

of transitional cell carcinoma (TCC) in dogs, her compliment is particularly appreciated, as is the attention paid to our manuscript. In the study, the authors treated a group of frail dogs in which chemotherapy had already failed, some degree of urinary outflow obstruction had already developed, or both. Accordingly, any risks associated with the ultrasound-guided endoscopic diode laser ablation (UGELAB) procedure was considered acceptable by the attending clinicians and owners.

Using survival time as an endpoint has some limitations, but given that imaging all of the dogs in the same way at the same frequency was not possible, survival time was considered the most objective endpoint available. Prior treatments were summarized in the results.

Dogs with TCC can indeed do very well with conventional treatment (eg, NSAIDs with or without cytotoxic chemotherapy). Ultimately, we believe that UGELAB should be used in combination with, and not as a substitute for, these treatments. With many types of tumors (including osteosarcoma, hemangiosarcoma, and mast cell tumors in dogs), reducing the tumor burden prior to starting cytotoxic chemotherapy has been shown to improve the outcome. However, to allow for an initial evaluation of this new procedure, we decided to only include dogs that did not receive adjuvant cytotoxic chemotherapy. Use of NSAIDs was allowed owing to their well-established clinical benefits. However, given that treatment with piroxicam as a single agent reportedly has been associated with an overall response rate < 18% and median survival time of 180 days, it seems highly unlikely that piroxicam administration alone accounted for the observed outcome in this patient population.

Stenting and UGELAB are very different procedures. Stenting alleviates obstruction but does not reduce tumor burden. In contrast, UGELAB alleviates obstruction, can be used regardless of location, and reduces the tumor burden.

Patient selection is important for UGELAB, as with any interventional procedure. Also, having now treated 98 dogs with the UGELAB procedure, the authors recognize

that there is a steep learning curve. In the absence of an individual experienced in the UGELAB procedure, stenting might be the most viable course of action for a given case. However, a steep learning curve alone is not a reason to avoid a new procedure. The authors look forward to presenting additional results to help better define the role of UGELAB in conjunction with other treatments for the management of dogs with TCC.

In the final analysis, the more tools and options we have to treat this cancer and thus help our patients and their owners, the better. In the authors' opinion, we need to focus on how we can incorporate different approaches in a synergistic fashion. Just as the clinical manifestations we face are varied, so must our approach to this cancer be varied so as to involve every possible tool to improve the quality of life for our patients. We believe that UGELAB is one such tool.

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Educational debt burden of veterinary students

Thank you for the February 1, 2012, JAVMA News articles on educational debt¹⁻⁵ and the student-run Veterinary Business Management Association.⁶ I believe this association will stimulate many students to become future practice owners.

With respect to the article on debt relief for some borrowers,² I wonder whether Mr. Kantrowitz is aware that, according to the most recent AVMA survey of fourth-year veterinary students,⁷ 18.4% of year-2011 graduates reported having ≥ \$200,000 in educational debt and that, for the approximately 90% of year-2011 graduates who reported having educational debt, mean debt was \$142,000. Importantly, the AVMA survey did not include data from the approximately 500 North American students who graduated from the three Caribbean schools of veterinary medicine in 2011 or from North American students who graduated from accredited schools outside the United States. Anecdotally, I found in 2010 that 75% of graduates of a private veterinary college in the

United States expected to graduate with > \$200,000 in educational debt and close to 60% expected to have > \$220,000 in educational debt.

According to the 2011 AVMA Report on Veterinary Compensation and the AVMA's online salary calculator,⁸ most veterinarians with 20 to 25 years of experience do not currently earn \$200,000 a year, and salary trends suggest that few of today's graduates will ever earn > \$142,000 a year. Veterinary student debt has historically increased at a 7% annual rate, whereas starting salaries have increased at a rate of < 3% annually over the past 10 years.

Clearly, there will be some debt erosion over time because of inflation. However, it seems highly unlikely to me that most of today's veterinary graduates will have paid off their educational debts within 20 years after graduation. The income-based repayment (IBR) plan for federal student loans, the proposed pay-as-you-earn (PAYE) plan, and the public service debt relief programs may help many of today's graduates survive their debt burden. However, under the IBR and PAYE plans, many will have substantial principal balances remaining after 20 to 25 years (as much as 25% to 200% of the initial loan balance). And although these balances will be forgiven under the IBR and PAYE plans, there is uncertainty with regard to how the Internal Revenue Service will view this forgiven debt.

I have talked with Dr. Ted Cohn, AVMA Executive Board Chair, about much of this and am pleased that the AVMA is proceeding with its efforts to gather accurate facts on the economics of the profession and increase client visits. As a long-term AVMA member, I am grateful that the AVMA is proceeding with this effort posthaste.

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2. Larkin M. Modest relief coming for some borrowers. *J Am Vet Med Assoc* 2012;240:244-245.
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4. Larkin M. Job search complicated by personal circumstances. *J Am Vet Med Assoc* 2012;240:248.
5. Larkin M. Making it work on a modest budget. *J Am Vet Med Assoc* 2012;240:249.
6. Larkin M. Taking matters into their own hands. *J Am Vet Med Assoc* 2012;240:250–251.
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Benchmarks for veterinary college accreditation

As a former member (2004 through 2009) of the AVMA Council on Education (COE), I read with interest the recent letter¹ by Dr. Gerhardt Schurig on the roles played by the AVMA, the COE, and the Association of American Veterinary Medical Colleges in the accreditation of schools and colleges of veterinary medicine (CVMs). Dr. Schurig writes that COE accreditation is “a standards-driven, evidence-based process relying on key quality-control features, many of which are embodied in the COE *Policy and Procedures Manual*.” However, as I read the *Policy and Procedures Manual*, I do not identify detailed information on the quality-control features used to guarantee that the accreditation standards are met or find specific criteria for evaluating the evidence provided by the CVMs.

As an example, standard 4 states, “Normal and diseased animals of various domestic and exotic species must be available for instructional purposes, either as clinical patients or provided by the institution. While precise numbers are not specified, in-hospital patients and outpatients including field service/ambulatory and herd health/production medicine programs are required to provide the necessary quantity and quality of clinical instruction.”² However, no benchmarks or guidelines (eg, total number of cases required for the population of students in clinical rotations, number of cases per student, or variety of disease

conditions) are provided to determine whether a particular CVM is in compliance with this standard. Similarly, the requirements for compliance with other standards appear to me to be extremely vague.

During the time I served on the COE, I recall no benchmark or quality-control guidelines provided to council members to assist them in the evaluation process, and I am not certain what Dr. Schurig was referring to when he stated that CVMs are assessed “through the use of appropriate data sets analyzed by means of processes detailed in the *Policy and Procedures Manual*” because I did not see a description of these data sets and processes in my recent reading of the standards. Although I agree that accreditation decisions should be made on a case-by-case basis, the lack of benchmarks or guidelines may result in decisions that some could consider arbitrary.

Dr. Schurig states, “The standards adopted by the COE are such that COE-accredited CVMs are considered the gold standard of veterinary medical education around the world.” Many foreign CVMs have sought or are seeking COE accreditation, but this fact, in itself, does not prove that COE accreditation is the gold standard. In my present role as an undergraduate student and alumni health career advisor and evaluator at Cornell University, I have visited several foreign schools with both human and veterinary medical educational programs and have heard numerous reasons why these institutions desire COE accreditation.

Dr. Schurig describes the oversight of the COE by the US Department of Education and the Council on Higher Education Accreditation, the composition of the COE, the mechanism for selection of COE members, and the mechanism for changing the standards. Although interesting, this information does not appear to be directly related to the concerns raised by Dr. Robert Marshak in his commentary regarding veterinary college accreditation.³

I am pleased that the AVMA has appointed a task force to critically evaluate the appropriateness

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of COE accreditation of foreign CVMs and urge that this be followed by a critical review of the current standards for accreditation, particularly with respect to developing appropriate benchmarks for use in the evaluation process yet still allowing CVMs flexibility in meeting those benchmarks.

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Dr. Granstrom responds:

Dr. Kallfelz' letter illustrates the fundamental difference between an accreditation program based on process evaluation versus a program based on outcomes assessment. Since the early 1990s, the US Department of Education has, in an effort to improve public accountability, required recognized accrediting agencies to increase their focus on outcomes assessment. The 1998 and 2006 recognition guidelines from the Council on Higher Education Accreditation similarly emphasize outcomes assessment. In compliance with these policies, the AVMA Council on Education (COE) introduced a new accreditation standard in 2002: outcomes assessment. The COE continues to incorporate process evaluation in the accreditation process through, for example, the direct inspection of facilities and equipment, the direct observation of the educational process, and the collection of various data sets. However, the primary focus has shifted to direct and indirect assessment of student achievement in nine areas of clinical competency and the evaluation

of various other outcomes related to compliance with the standards of accreditation. The veterinary medical colleges are required to collect indirect measures of student achievement, such as performance on the national licensing examination and student, alumni, and employer surveys designed to assess clinical competence. In addition, the colleges are required to conduct direct assessments of each student's clinical competence in nine areas specified by the COE. These data must be analyzed and reported to the COE and must be used by the college to address weaknesses in the curriculum. The COE monitors outcomes data and attendant curricular improvements annually or more frequently, as needed, through an interim reporting process.

Process assessments as well as student, faculty, and alumni interviews are used to validate information provided by the college in the self-study document required in conjunction with a comprehensive site visit. The clinical caseload data set mentioned by Dr. Kallfelz is included in the self-study document. Site visit teams are selected to provide a balance of experience (private practitioners and academicians) and expertise (companion animal and food animal). Site teams include four COE members, a state representative, a Canadian representative, and an AVMA staff member. Team members as well as the COE as a whole use their judgment to compare caseload data with on-site observations and with information on how healthy and diseased animals are used for student instruction. Outcomes assessment results are used to determine whether the educational approach is effective, regardless of the caseload numbers reported. Because of the wide variation in educational approach from school to school, minimum benchmarks have limited relevance to the desired outcome. It is possible to have an abundant caseload that results in unacceptable student outcomes; the converse also is possible. The purpose of accreditation is not to regulate or limit the educational process or model; it is to provide assurance that accredited colleges produce

qualified entry-level veterinarians on graduation.

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Jugular venipuncture for blood sample collection in cats

It was with surprise that I read that "jugular venipuncture is still mandatory when a larger panel of hematologic or plasma biochemistry analyses, coagulation assays, or serum testing is required" in the recent report "Effects of intravenous, low-dose ketamine-diazepam sedation on the results of hematologic, plasma biochemical, and coagulation analyses in cats" by Reynolds et al.¹ Sixteen years ago, one of my clients, who also happened to be an experienced licensed veterinary technician and an instructor in a local veterinary technology program, questioned why I was still using jugular venipuncture for collection of blood samples from cats. When I asked what method she would recommend, she suggested using a butterfly catheter and cephalic venipuncture. With the occasional rare exception, that was the last time I performed jugular venipuncture in my busy feline-only practice. Using a 23-gauge, thin-walled, 12-inch-long, winged infusion catheter; a multiple-sample Luer adapter; and standard evacuated blood-collection tubes, my technicians and I routinely obtain large blood samples from the cephalic veins of all but the most uncooperative patients with minimal restraint and minimal trauma for the cat, client, staff, and veterinarian. The 12-inch tubing allows the cat to wiggle without dislodging the needle from the vein. The 23-gauge needle provides a sufficient flow rate and is easier to introduce through a cat's tough antebrachial skin than larger needles. Protective gauntlets for the cat holder, a light glove on the paw-holding hand of the phlebotomist, and a calm demeanor are also required. Why this technique is not taught in veterinary schools (it wasn't taught in mine, anyway) is a mystery to me. I strongly urge

the veterinary profession to rethink the need for jugular venipuncture in cats.

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1. Reynolds BS, Geffré A, Bourges-Abella NH, et al. Effects of intravenous, low-dose ketamine-diazepam sedation on the results of hematologic, plasma biochemical, and coagulation analyses in cats. *J Am Vet Med Assoc* 2012;240: 287–293.

The authors respond:

We appreciate Dr. Romatowski's comments on venipuncture in cats. Unfortunately, not all veterinary practitioners and veterinary students are experienced phlebotomists, and the jugular vein remains one of the most frequently used sites for blood sampling in cats.¹ In the authors' opinion, any issue arising with this method is related to the natural reluctance of many cats to be physically restrained. This is the reason why we considered it relevant to validate a purposely designed, short-term chemical restraint procedure. Validation of alternative methods for blood sampling in cats, as has been done in humans,² would also be needed. All methods that make blood sampling easier and safer in cats have to be encouraged.

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2. Lippi G, Salvagno GL, Brocco G, et al. Preanalytical variability in laboratory testing: influence of the blood drawing technique. *Clin Chem Lab Med* 2005;43:319–325.

Increasing class size at veterinary medical college

As a long-time admirer of the Cornell University College of Veterinary Medicine, I found the recent announcement that the college intends to increase its class size very upsetting. When I graduated from Cornell's College of Veterinary Medicine in 1955, my class consisted of 50 students. This past fall, however, the college announced that it will launch a \$22 million renovation project that will allow it to increase its class size from the current 102 students to approximately 120 students a year.

In my opinion, spending such funds during the current economic climate does not make sense and increasing class size at a time when new graduates are having difficulties finding employment is totally unjustified, especially given that every survey in the past few years has shown a decrease in the number of patient visits to veterinary practices.

During my half century in the veterinary profession, I have been fortunate enough to find work in virtually every field a veterinarian can be involved in, from instructor in farm animal medicine at Cornell University, to farm practice, to military service in the US Air Force, to director of the Georgetown University animal research facility, and, finally, to small animal practice in an extremely successful hospital in Northern Virginia. All of these activities were satisfying beyond belief, and I consider myself one of the luckiest men in the world. This is why I am so distressed when I see my widely respected alma mater make what I believe to be a disastrous change in course. The announced changes will do nothing to improve the problems in veterinary practice, but only make them worse. There are many areas where the college can be of great assistance, but the changes planned are definitely not among them.

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Veterinary employment outlook

In his March 1 commentary,¹ Dr. Osburn wrote, "Educational

institutions cannot and should not change quickly, and veterinary medical education should not be expected to change dramatically with every perceived shift in the prevailing winds." Certainly, no one expects the US veterinary colleges to change annually with the upticks and downturns in the economy. However, I believe there is ample evidence in 2012 that the current economic concerns of veterinary graduates reflect not just the recent recession, but also long-term economic forces that have been adversely affecting the profession for more than 30 years.

A 1985 AVMA workforce study² found that there would be an excess supply of veterinarians through the year 2000, exceeding demand by 73%. This report recommended a 20% decrease in the annual number of US veterinary graduates, although it also projected that this would not dramatically alter the decline in veterinary incomes without a simultaneous growth in demand of 5% to 10%. The follow-up 1999 KPMG study³ (also commissioned by the AVMA) concluded, "There is evidence that in purely economic terms, there is an excess of veterinarians, which is a cause of downward price pressure and is projected to result in stagnant veterinary incomes over the next 10 years."

Recent AVMA employment data seem to validate such concerns. In his editorial, Dr. Osburn cites the fact that 1,798 of 2,421 (74.3%) fourth-year students who responded to the AVMA's 2011 senior survey had received at least 1 offer of employment.⁴ However, this included students who had received an offer for a position in an advanced study program. Of the 1,537 respondents who had accepted an offer, 799 (52%) accepted a position in an advanced study program. For students planning on entering private practice full time, mean starting salary decreased in 2011, compared with 2010 (\$66,469 vs \$67,359),⁴ representing the first time in recent memory that a year-on-year decrease was reported for this survey. It seems obvious to me that predictions of market saturation and declining opportunities are coming to pass.

One only needs to look at the legal profession for a cautionary tale. Years of opening new law schools without regard for the economic realities of the legal profession has led to widespread unemployment among newly graduated lawyers, although the law schools continue to tout questionable statistics showing rosy employment figures.⁵ If no corrective actions are taken, veterinary medicine may soon find itself in a similar predicament, with colleges being sued for false advertising by disgruntled, jobless alumni.⁶

I believe it would be wise for the AVMA and Association of American Veterinary Medical Colleges to temporarily halt the accreditation of new veterinary programs and block any further expansions in class size as a condition of maintaining accreditation, pending further workforce studies. Although some may raise the possibility of antitrust lawsuits, with 43 AVMA-accredited veterinary schools worldwide and a historically low national applicant-to-seat ratio of 2.1:1, it is difficult to suggest that there is a lack of opportunities for students to pursue veterinary studies.⁷ In my view, such a moratorium is not “chang[ing] dramatically” with “perceived shift[s] in the prevailing winds,” but is belatedly acting on three decades of data. On the other hand, repeatedly ignoring years of ominous economic forecasts to fulfill short-term goals would be institutional sclerosis and a predictor of future decline.

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1. Osburn BI. How schools of veterinary medicine should respond to current predictions regarding trends in the veterinary workforce. *J Am Vet Med Assoc* 2012;240:517.
2. Wise JK, Kushman JE. Synopsis of US veterinary medical manpower study: demand and supply from 1980 to 2000. *J Am Vet Med Assoc* 1985;187:358–361.
3. Brown JP, Silverman, JD. The current and future market for veterinarians and veterinary medical services in the United States. *J Am Vet Med Assoc* 1999;215:161–183.
4. Shepherd AJ, Pikel L. Employment, starting salaries, and educational

indebtedness of year-2011 graduates of US veterinary medical colleges. *J Am Vet Med Assoc* 2011;239:953–957.

5. Segal D. Is law school a losing game? *The New York Times* 2011;Jan 8:BU1.
6. Lee PG. Law grads sue over tuition. *The Wall Street Journal* 2011;Aug 11.
7. Larkin M. Will veterinary education hit a tipping point? *J Am Vet Med Assoc* 2011;238:256–260.

The author responds:

In response to the letter from Mr. Fish, who challenges the evidence that I offer for the premise of my March 1 commentary,¹ it should be noted that although workforce projections are somewhat subject to interpretation, the references that Mr. Fish quotes—such as the 1985 AVMA workforce study—are out of date and have been supplanted by more recent information, including occupational employment figures in the January 2012 issue of *Monthly Labor Review* from the Bureau of Labor Statistics, which project job growth of 35.9% for veterinarians from 2010 through 2020.

Academic veterinary medicine should change to meet society's evolving needs, but good academic planning that meets the high standards required for accreditation by the AVMA Council on Education (COE) and national and state licensure requires careful consideration of preveterinary requirements, the four-year curriculum, and the implementation process for veterinary medical students throughout their four-year matriculation. All of these considerations are subject to annual review by the COE. Substantial changes require changes in how courses are funded, COE approval, and eventual integration into the national examination.

Even with these restrictions, veterinary colleges in the United States have undergone momentous changes that have transformed the practice of veterinary medicine and made veterinary medicine in the United States the envy of the world. For example, new opportunities have arisen through the development of 43 specialty and subspecialty veterinary practice areas, which now account for 12% of the veterinarians in this country. Salaries of these specialists are much higher than those of general practitioners. One of the reasons that many new

graduates seek internships is to qualify for residency positions, and they often choose to do so even if they have received one or more offers of employment in private practice.

For reasons that include economics, lifestyle decisions, and location preferences, a change has occurred in the distribution of graduate veterinarians that requires a response and development of a forward-thinking plan for the profession from the veterinary colleges and AVMA. Such a process is currently underway, as evidenced by the educational and economic summits now taking place between the Association of American Veterinary Medical Colleges and the AVMA. The North American Veterinary Medical Educational Consortium report² outlines specific ways for the colleges, AVMA, testing and licensing entities, and veterinary medical students to address the veterinary profession's current economic crisis. In addition, other programs are underway to change practice models and include more preventive or wellness approaches, which have proven successful for some practices. Veterinary medicine has weathered social and economic upheaval in the past, and with some of the best minds in the profession dedicated to intelligent, responsive, and measured change, I am confident that we can adapt to the economic challenges of this current environment as well.

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1. Osburn BI. How schools of veterinary medicine should respond to current predictions regarding trends in the veterinary workforce. *J Am Vet Med Assoc* 2012;240:517.
2. North American Veterinary Medical Education Consortium. Roadmap for veterinary medical education in the 21st century: responsive, collaborative, flexible. NAVMEC report and recommendations. Available at: www.aavmc.org/roadmap. Accessed Mar 2, 2012.

The AVMA, the human-animal bond, and the one health movement

I want to congratulate the AVMA Executive Board for ap-

proving the collaboration with the International Association of Human-Animal Interaction Organizations that will result in an expanded human-animal bond track at the 2013 AVMA Convention in Chicago.¹ This decision will expand the AVMA's role in promoting interdisciplinary continuing education among the health professions.

Rebecca Johnson, PhD, RN, is the current president of the International Association of Human-Animal Interaction Organizations, which has its international meeting every three years. She currently provides research and education leadership on human-animal interactions at the University of Missouri, Columbia, Mo.

The human-animal bond arena is not a private preserve; it takes a team approach incorporating individuals from all of the health professions to maximize our efforts in improving human and animal health and well-being. Thank you also to Dr. Roger Mahr, 2006–2007 AVMA President, for helping Dr. Johnson connect with AVMA staff regarding this recommendation to the Executive Board, which is another example of AVMA leadership in the one health movement.

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1. Larkin M. Human-animal bond to be emphasized at 2013 AVMA convention. *J Am Vet Med Assoc* 2012;240:494.