A Message from the President of ACLAM

Dear ACLAM Diplomates:

Welcome to 2014. I hope that all of you were able to reflect, relax and rejuvenate (3Rs of Holiday) and are finding it possible to recalibrate, reinvent and resolve (3Rs of New Year). This Newsletter message highlights upcoming ACLAM events, and outcomes of our recent leadership summit, and some thoughts regarding an important balancing act that confronts our College.

Elsewhere in this Newsletter you can read an excellent article by Janet Rodgers providing information about how questions are developed for the ACLAM Exam. Thanks to Janet for providing this informative piece and for agreeing to provide another Examination-related article for the next ACLAM Newsletter.

Upcoming ACLAM events:
If you have forgotten that the 2014 ACLAM Forum will take place May 4-7, 2014 in Coeur d’Alene Idaho, it is not because I haven’t mentioned it. For a listing of ACLAM-associated activities that will take place (“DiP SO HIP”), see additional information later in this newsletter. The ACLAM Forum Program Committee has done an incredible job lining up relevant and interesting speakers. Two recent additions to highlight include an overview about lab animal workforce issues prepared by Phil Richter and the Planning Committee (Sunday afternoon at 5PM), and an ‘ACLAMs Got Talent’ Show. It’s not too late to participate in the latter—let me know if you are interested in displaying your unique skill set.

Standard Setting Study: Details about this process, which will serve to refresh our examination material and scoring rubric, were provided in the Dec 2013 Newsletter. Helen Diggs is assisting with organizing this effort, which will take place prior to the 2014 AVMA meeting in Denver Colorado. This promises to be a Rocky Mountain high experience and we thank everyone who has agreed to participate.

ACLAM Leadership Summit(s): Most of the BOD and past and present chairs from 11 ACLAM committees convened for a full day meeting in cold and rainy Memphis at National AALAS headquarters on February 3 (at least one of us was glad to have a distraction the day after the so called ‘stupor bowl’). Ann Turner led us through exercises to help align our current committee activities with our strategic plan. I urge you to look at ACLAM’s strategic plan (https://www.aclam.org/account/logon?ReturnUrl=%2fmembers%2fgeneral) if you have not done so lately as this document will be used to calibrate BOD activities for the next several years. Part of the summit included generating stage names for each participant; these are revealed in the article on page 4.
For the remainder of my term on the BOD, I will be promoting alignment of our activities and investment of resources to facilitate these goals of promoting our association’s mission. For us to make a difference in our specialty, we must be more strategic and more focused. We cannot do this if we diminish the outreach and recruitment efforts we’ve worked hard to establish over the last five years.

Two opposing issues emerged during the ACLAM leadership summit that have particularly stuck with me: 1. The need to more effectively market and portray ACLAM member expertise, and 2. The consideration that we have a flourishing membership and interest in our profession paired with concerns about the number of available positions. Does it make sense to continue to communicate with veterinary students and other potential future Diplomates if we think we have ‘too many’ Diplomates to fill positions that are being advertised?

The CPC, Mentoring Committee, and program committees have done a great job working with partnering organizations such as ASLAP to substantially increase interest and training opportunities for our profession. TPOC ensures that the nearly 50 ACLAM-approved training programs are aligned with the role delineation document. The Exam committees produce and deliver an examination that is considered the gold standard among the veterinary specialties. But, should we start turning the valve counterclockwise because we are overpopulating our ranks?

I argue that we should continue, and in fact increase, our efforts to publicize who we are and what we do, and we should continue to recruit the best and brightest new leaders to our specialty. Simultaneously, we should turn up the volume on the downstream end of the pipeline by finding new opportunities to use our very broad and versatile skill sets.

I have the privilege of having been on the faculty at a college of veterinary medicine for over 20 years, and in this position have been able to view the veterinary pipeline and academic aspects of our profession from a bird’s eye view. As a laboratory animal professional, I have had many opportunities to participate in activities that range significantly beyond most of my veterinary academic colleagues. The veterinary profession and our MD and PhD colleagues remain quite uninformed about what we do. These points, and the need to train more research-oriented veterinarians, are highlighted in a reprint in this Newsletter summarizing conclusions of an NAS commissioned report on Veterinary Workforce needs (National Research Council. 2011. Workforce Needs in Veterinary Medicine. Washington, DC: The National Academies Press). I urge you to read the conclusions of this report (reprinted in this Newsletter), as it paints a relatively positive outlook for ACLAM if we poise ourselves appropriately—which will require us to do a better job relating what it is we can do than we have previously occupied.

Nearly all professions have been impacted by the economic downturn that has plagued the global economy over the last 6+ years. In that context, ACLAM Diplomates have done reasonably well. This may be because the best way to stay employed in a challenging job market is to be excellent, resourceful and resilient. Excellent, resourceful, and resilient trainees become excellent, resourceful, resilient colleagues. It is hard to change an average student into an outstanding student, and it is difficult to change an outstanding student into anything other than an outstanding graduate. To ensure the competitiveness of our trainees, we should set our sites on recruiting the very best into our specialty, and provide them with the opportunities to develop critical and creative thinking skills. We cannot do this if we diminish the outreach and recruitment efforts we’ve worked hard to establish over the last five years.

For the remainder of my term on the BOD, I will be promoting alignment of our activities and investment of resources to facilitate these goals of promoting our association’s mission.
expertise and recruiting new talent. I look forward to working with the dedicated volunteers on the BOD and committees for the rest of this year in moving us forward in these directions. Please let me know your thoughts about these issues, and I hope to see you in the Gem State in a few short weeks.

Sue Vandewoude  
President, ACLAM

ACLAM Announcements  
Call for Posters for the 2014 ACLAM Forum

The 2014 ACLAM Forum will be held May 4-7, 2014 in Coeur d’Alene, Idaho. Once again we are inviting abstract submissions for poster presentations. The goal of the Forum poster session is to disseminate valuable information relating to Laboratory Animal Medicine to meeting attendees. Recognizing that not all attendees are able to go to both the AALAS and Forum meetings, posters from the AALAS meeting will be accepted for presentation. Posters presented at other meetings will also be accepted pending approval by the selection committee. Abstracts should be limited to 300 words or less. The abstract should be a concise summary of the information in the poster, and should not contain graphs, tables or figures. It should include a title, author(s) and author affiliation(s). Please send abstracts to Jeanne Wallace at jeanne.wallace@vanderbilt.edu by Friday, April 18, 2014. Please note we are very liberal on poster acceptance!

GRAC Update

ACLAM’s Governmental and Regulatory Affairs Committee (GRAC) continues to monitor legislative and regulatory activity affecting animal research around the world:

ACLAM’s Board of Directors (BOD) recently approved the formation of an Animal Transportation Task Force, and tasked the GRAC with identifying and soliciting members for the Committee. The Task Force will be made up of six ACLAM Diplomate core members and numerous affiliate members with experience and expertise in the complex issue of the local, national, and international transportation of small and large laboratory animals. The Committee will report to the ACLAM BOD and will begin with efforts to analyze specific animal transportation risks and recent changes in the animal transportation environment. One important focus will be to educate the public, particularly those affiliated with the transportation industry, on the importance of laboratory animal transportation to research efforts. Drs. Bill White, Joe Simmons, Ken Boschert, Karyn Armstrong, Darrell Hoskins, and Judy Fenyo-Melody will make up the core membership. The Committee has already met twice to review mission and focus. The Transportation Task Force will liaise with the GRAC and coordinate with other stakeholder groups such as AALAS, APV, IATA, NABR and ECLAM.

Steven Wise, a well-known attorney representing the Nonhuman Rights Project, recently filed three lawsuits in New York State on the grounds of habeas corpus (unlawful detention) of four chimpanzees, two owned by private individuals and two used in locomotion research at Stony Brook University on Long Island. All three lawsuits were dismissed on the grounds that the chimpanzees cannot be considered “legal persons”. Habeas corpus petitions in New York are automatically appealed to higher courts. The GRAC will be following the appeals of these three lawsuits in New York’s appellate courts, where the legal personhood of the chimpanzees will be at issue.

Respectfully Submitted,  
Heather Narver

2014 Recruitment and Education Oversight Committee ACLAM Leadership Summit

The 2014 REOC associated committee leadership summit was held on Monday Feb 3, 2014 near Memphis TN. Seventeen participants from 11 committees and 10 members from the ACLAM BOD were present. AALAS Executive Director and Associate Executive Director Ann Turner and Chris Lyons, acted as facilitator and recorder. Participants included:

Camp ACLAM: Matt Rosenbaum  
Ramaswamy Chidambaram
Career Pathways: Megan Rowland
IT Management: Tom Meier, Jim Taylor
Joint ACLAM/ASLAP Program: Misty Williams-Fritze
Mentoring: Larry Shelton  
Charlette Cain
New Dip Welcoming: Vanessa Lee  
Betty Theriault
Planning: Norm Peterson, Phillip Richter
Publications: Jim Fox
Recertification: Lisa Forman
As an opening exercise, Claire Hankenson lead us through an ice breaker that allowed everyone to create a stage name using the name of a former pet + street where we currently/previously lived (see below). Ann then asked us to work in groups to identify current strengths of ACLAM, past activities/tasks we honor but no longer actively serve the organization, and opportunities/gaps for us to consider as we look toward the future. Each committee reviewed its current activities and related these to the ACLAM strategic plan. Phil Richter provided an excellent overview of pipeline and demographic issues. His powerpoint presentation is available on the members-only section of the website, and he will be presenting this material at the 2014 ACLAM Forum, May 4-7 in Coeur d'Alene, Idaho. In the afternoon we moved into working groups and brainstormed specific action items that were aligned to our strategic plan. This information was presented by each group to convened participants. The BOD is currently working through the collated action items, and in particular BOD liaisons and committee chairs will share the outcomes of this exercise with committee members. We are also gathering information from participants to determine whether the process provided value, and how we might reframe a similar activity for future leadership groups.

The REOC was sunsetted at the end of the meeting, and we also determined that there was no need for an ad hoc governance committee, so the BOD has voted to remove that committee from our structure as well. Mel Balk has updated our website to reflect these changes.

A synopsis of the themes that emerged from our in person conversations follows:

The exam, forum, and recertification processes are working well. We are financially sound. Recruitment efforts may be exceeding our needs; we should consider enhancing our partnership with ASLAP or others in this area to conserve resources and time. Marketing efforts need to be developed to establish/enhance our identity—for us, our veterinary peers, our employers, and the greater scientific community. We need to improve our capacity for electronic communications, and our presence on the web; our virtual world needs to be developed. We should expand and enhance our presence globally. We should strive to be more nimble in anticipating and reacting to societal changes that impact our profession. We should consider programs to promote and develop new skill sets, or revitalize historical strengths—i.e., management/leadership, clinical, research contributions (specialized and primary), regulatory, etc.

**ACLAM Leadership Stage Names**

- Matt Rosenbaum: Rascal Williamsburg
- Damaswamy Chidambarm: Ruby Maple
- Megan Rowland: Scruffy Beverly
- Tom Meier: Jackson Goldenrod
- Jim Taylor: Sandy Seward
- Misty Williams-Fritze: Muffin Lake
- Larry Shelton: Midnight Gallier
- Charlette Cain: Misty Chapelle
- Vanessa Lee: Ziggy Feuchel
- Betty Theriault: Harvest Chick
- Norm Peterson: Heidi Arcadia
- Phillip Richter: Jeremy Val Verde
- Jim Fox: Buck Littleton
- Lisa Forman: Candy Kenwood
- Judy Hickman-Davis: Raphine Parkside
- Deb Hickman: Runaway Meadowgrass
- Jeanne Wallace: Rokey Feliz
- Craig Franklin: Chopper Adams*
- Don Casebolt: Stubby Ferman
- Claire Hankenson: Benny Beechwood
- Gary Berkowskie: Gipper Broadfield
- Joe Thulin: Oliver Owen
- Kate Pritchett: Moses Townsend*
- Mel Balk: Dusty Ottawa
- Pat Turner: Blue Barsuda
- Steve Niemi: Duke Maple
- Stu Leland: Benji Lupine
- Sue VandeWoude: Hook Seawood
- Tim Mandrell: Louie Barnes
- Ann Turner: Sputnik RD
- Chris Lyons: Ginger Goldie

*were not in attendance at forum, but gladly provided a stage name
Posting ads on the ACLAM website and in the ACLAM Newsletter

Ads are posted on the ACLAM website for 90 days within a few days of submission. An approximately 150 excerpt of the ad will appear in the next ACLAM Newsletter referring the interested reader to the ACLAM website.

The Newsletter is published 4X per year:

- March: Pre Forum
- June: Pre AVMA
- Sep: Pre AALAS
- Dec: Post AALAS and Pre Pre Forum

The readers of the ACLAM Newsletter are veterinarians board certified in laboratory animal medicine. If the ad is for a veterinary position requiring board certification in this specialty, the Newsletter is an appropriate place to advertise. Ad content should be submitted within the body of a plain text email or as a MS Word attachment to nanettekleinman@gmail.com and formatted into the following sections:

- Job Title (short position title)
- Applications (how applicants are to apply)
- Position
- Requirements (qualifications, etc.)
- Employer Information (additional information about the employer (EEO etc.))

The deadline for Newsletter submission is two weeks prior to the publication date.

There is no charge for posting ads for veterinary positions in laboratory animal medicine through ACLAM.

Hot Topics

Developing ACLAM Certification Exam Questions
Janet Becker Rodgers, February 2014
Thanks to Lois Zitzow and Patti Coan for helpful comments on the first draft

For those of you new to ACLAM, or for those whose memories have faded a bit since 2005, here is a review of how questions for the Certification Examination are developed. ACLAM works with a

2014 ACLAM Dues Notice
December 2014

The 2014 annual dues of $300 are due January 1, 2014. Remittance should be sent to the Executive Director at your earliest convenience. In accordance with Article VIII of the ACLAM Bylaws, your dues must be received by March 1, 2014. Late dues payments are – March 2-Sep1- $350. After Sep 1- $400.

If possible, please pay your dues online at the ACLAM Website- www.aclam.org. Please click on the sign in button and use your AALAS ID and password and just follow the directions. Below is an alternate payment option.

Please make checks payable to the AMERICAN COLLEGE OF LABORATORY ANIMAL MEDICINE or ACLAM or you may pay by Credit Card.

YOUR NAME:_______________________________________
Checks or Credit Card
___ MasterCard   ___Visa          ____AMEX
Credit Card #   ____________________________

(Expiration Month and Year)      Security code

(Please print name as it appears on Credit Card)

(Signature)

ACLAM Federal Tax ID Number 36-6108149

Dues payments to the American College of Laboratory Animal Medicine may be deductible on federal income tax returns as business expenses, but they are not deductible as charitable contributions. Contributions to the ACLAM Foundation are deductible as charitable contributions.

Or RETURN PAYMENT TO:
Dr. Melvin W. Balk
Executive Director, ACLAM
96 Chester Street
Chester, NH 03036
certification and licensure testing consultant to ensure that our exam is reliable, defensible, and has content validity. We analyze how each question performs on the exams, not just with regard to how many candidates answer correctly, but also on how well the question “discriminates” between the top third and bottom third of candidates on the examination as a whole. Our examination is a high-stakes proposition. There are about 350 chances to draw a line between those candidates who are ready to become Diplomates and those who are not. Every question on the exam, then, must be as good as it can be. Exam questions are designed to measure how well a candidate’s knowledge and skill meet ACLAM’s criteria for the minimally-competent Diplomate. These criteria are laid down in our Role Delineation Document and test template (available at http://www.aclam.org/certification/application-and-study-tools).

Each question focuses on an important concept on the test template, not simply on the candidate’s ability to recall facts. Examinees should be required to reach a conclusion, make a prediction, or select a course of action in order to answer the question correctly. There should be enough information in the stem of the question for the candidate to formulate the correct answer without looking at the choices.

The Exam Resources committee is charged with formulating questions and coordinating with the Exam Committee to ensure that the new questions are appropriately written and do not already exist in the database. Each question will be reviewed and edited by several colleagues, to ensure that it is clear, concise, covers an important topic on the test template, and is properly supported by significant reference sources available to all candidates. It may then be field-tested in an examination to see how it performs, undergo further editing, and only then be used as a scored item. After that, as long as the question is still relevant and discriminates well, it may be used intermittently for many years.

Current literature is a good source of question ideas. As an example, an article in this month’s Comparative Medicine is about minipigs as models for dermal vaccine delivery. What should the minimally-competent ACLAM Diplomate know about this concept? An exam question could be developed around any of several issues raised in this article: biomethodology for vaccine administration; comparisons between porcine and human skin; how to design an experiment with appropriate statistical power; how adjuvants work and the adverse side effects they can cause; appropriate chemical restraint regimes for minipigs; or signs of pain and distress in minipigs.

In the past, we might have produced a question like this:

Example 1. According to a recent study, which of the following is NOT an advantage of disposable syringe jet injectors (DSIJ) vs conventional needle injection (sub-Q or ID) of vaccines in minipigs?

A. facilitated expression of nucleic acid vaccines without the need for subsequent electroporation
B. eliminated potential needlestick injuries
C. decreased anxiety in recipients
D. faster injection
E. induces better cellular immunity

Why isn’t this a good question (aside from the fact that it is too simple, contains jargon, and is grammatically incorrect)?

1. It tests whether a candidate recalls “advantages” listed in one particular paper. Exam questions must cover information which is generally accepted as correct within our profession; to do otherwise invites exam challenges and limits the lifetime of the question to only one or two uses. Developing new questions is a major effort for many people; as a result, we no longer write short-dated questions.

2. Question stems formulated in the negative are confusing, particularly if one or more choices are also phrased negatively (as in choice C). We avoid these as much as possible.

3. Although the choices are copied nearly verbatim from the article, they have lost their contextual meaning. Faster injection by whom? What does “better cellular immunity” mean? What antigen and adjuvant are we asking about? If we used this question on the exam, we would expect that every minimally-qualified Diplomate could accurately recall part of this one article. Instead, we should instead be assessing the level of skill and comprehension related to general lab animal medicine.

Using the injection technique as a concept for a domain 3 question, we find a photograph on page 619 of Laboratory Animal Medicine, 2nd edition (a major reference work for ACLAM). Having this anatomical reference, and combining it with the research proposal, a draft question might be:
Example 2. An investigator proposes to vaccinate 12-week-old female minipigs intradermally or subcutaneously to test the success of a new adjuvant. The injection sites will be 1 inch lateral to the nipples at the level of the navel, because the investigator has heard that this area is most similar to human skin. Your veterinary advice with regard to this injection site is that:

A. it is the preferred site for intradermal injection in minipigs
B. using this site may damage mammary tissue
C. using this site may result in inadvertent intravenous injection
D. general anesthesia will be required to prevent pain
E. higher levels of IgD will be obtained than with intramuscular injection

This stem requires the examinee to select the best course of action, based on knowledge of best practice, vascular anatomy, causes of pain, and porcine immunology. The question still needs to be discussed by the committee, and edited for clarity and content, but it is a better format than the Example 1. The choices must be worded so that there is only one best answer, and the incorrect choices must be plausible to an examinee who is unfamiliar with this topic. Other references may support or refute the choices, so further literature searching is required.

Although ACLAM may be fairly advanced in examination quality, there is room for improvement. The National Board of Medical Examiners (NBME) has a manual on question writing available free online (http://www.nbme.org/publications/index.html). It is also worth 45 minutes to go through the NBME online tutorial (www.nbme.org/IWTutorial); you too can correctly answer questions about the canonical process and octal stylus!

The NBME online tutorial describes two broad categories of flaws in multiple choice questions: (1) flaws that aid test-wise examinees and (2) flaws that add irrelevant difficulty. It also explains how to construct a one-best-answer question.

One of the most common problems with our test questions is that too many are in a “multiple true/false” format. These poor questions often have meaningless stems, such as “Which of the following statements (about condition X) is false?” Others have what appear at first to be reasonable stems. Example 1 is a form of a multiple true-false question, because it asks for the choice which is not “an advantage”. There could be many disadvantages to using DSIJ, reported in different publications. The major problem with multiple true-false formats is that every choice must be unequivocally true or absolutely false. As we so often state, nothing is absolute in biology, so writing and answering these questions is fraught with difficulty. Examinees will scrutinize every word and phrase, searching for all possible clues to the intended meaning of the choices. The best way to avoid writing these questions is to use the “cover-the-options” method suggested by NBME: cover up the options, and then make sure the correct answer can be stated after reading just the stem.

This multiple true/false question was retired from our database after being used in 1996 and 2006. Can you see why?

Which is TRUE regarding mouse encephalomyelitis virus?

A. It is a coronavirus
B. It is an enteric virus with no adverse intestinal effects
C. It is spread by ectoparasites
D. Natural infections result in demyelinating disease
E. It causes diarrhea and death in hamsters

It fails the “cover the options” method; it gives a grammatical clue because choice D doesn’t begin with the word “it”; examinees could be flustered by use of absolute statements such as “no adverse intestinal effects”, “result in demyelinating disease”, and “causes diarrhea and death”; and worst of all... there are at least two correct answers. One of them was not noticed until after the examination, when a large number of examinees chose answer D. After further literature review, the entire question had to be discarded.

ACLAM needs its members to support and contribute to the certifying examination. Developing good new questions is extremely time-consuming and challenging, and requires team effort. It is a perpetual process of refinement. Over the past ten years, however, our exam has improved a lot, and will continue to do so with strong involvement and commitment by the triad of Exam-related committees: Exam Resources, Exam, and Exam Review.
The charge to the committee was “to study the broad scope of issues related to the veterinary workforce in the United States, including a study of historical changes in the size and characteristics of the veterinary workforce; assess the demographics and adequacy of the current supply of veterinarians in different occupational categories and sectors of the economy; and identify incentives, disincentives and other factors that are likely to affect the numbers of veterinarians seeking jobs in different sectors in the future.”

At this time in its storied history, the current picture of the profession is one of dynamic change and economic challenges. These conditions are altering the needs for veterinary expertise. The study was initiated at a time when there were concerns that veterinary academe was not producing sufficient U.S. graduates to fill the profession’s needs, especially in companion-animal and specialty practice. In response to the perceived future shortages, many veterinary schools have increased their enrollments, and new schools have been created in the United States and beyond, including for-profit schools, some of which have been accredited by the American Veterinary Medical Association (AVMA) Council on Education. Moreover, there are plans to build additional schools in the United States. As a result, the supply of veterinarians is gradually growing. However, since the economic downturn that started in 2008, veterinary schools have lost tens of millions of dollars in public financial support that has increased the cost of a veterinary education to students. To generate much-needed revenue, class sizes have increased, especially with higher-paying non-state residents. Concurrently, there has been an increase in the delivery of companion-animal oriented veterinary education and graduates seeking companion-animal jobs. These combined changes have brought the profession to a critical juncture.

The committee is concerned that an unsustainable economic future is confronting the profession and calls for veterinary organizations, academe, industry, government, and nongovernment organizations (NGOs) to proceed strategically and with urgency. However, for that support to be forthcoming, society must be convinced that an investment in veterinary medicine is an imperative. The public, policymakers, and even medical professionals are frequently unaware of how veterinary medicine fundamentally supports both animal and human health and well-being. Broadening the public’s understanding will require a commitment by veterinary leadership, the academe, and practitioners to develop and promote the profession as one that offers diverse career paths with many different niches for veterinarians, ranging from traditional companion-animal practice to public- and private-sector positions in biomedicine, animal research, wildlife, the environment, global food production, and public health.

Taxpayers must receive an adequate return on their subsidy to veterinary education and should be convinced of the benefits of subsidizing veterinary professionals. Most students come to veterinary schools to enter into the companion-animal sector of the profession and instruction in the care of pet animals forms a sound base of biomedical knowledge on which the comparative medicine components of instruction are layered. Thus, dog anatomy is the foundation, and pig, cow, horse, chicken, and wildlife anatomy are efficiently deliverable in a comparative context. The same is true for physiology, pathology, pharmacology, toxicology, medicine, and surgery. The primary shortcomings of the small animal model of instruction relate to the emphasis on comparative management paradigms for diseases related to inbred animals, and the limited focus on population level and environmentally-based disease prevention. Epidemiology, and environmentally based diseases prevention need to again be required core courses in veterinary curricula and in certifying veterinary schools.

Many of the positions that veterinarians need to fill will require additional education beyond the Doctor of Veterinary Medicine (DVM) degree. Yet the basic challenge remains funding this education. Thus, while pursuing less-costly approaches to delivering veterinary education and veterinary services is required, it is even more essential that the colleges and schools of veterinary medicine engage employers and public and private funders in their efforts to target and strengthen some fields of veterinary expertise and research.

In this chapter, the committee presents its key findings and conclusions about the state of the veterinary profession and the prospects for its future, and it explores options for how the veterinary schools and colleges can prepare their graduates to better respond to the changing societal needs for veterinary expertise.
CONCLUSION 1: In its review of the profession, the committee found little evidence of widespread workforce shortages in veterinary medicine, although industry and some areas of academic veterinary medicine are experiencing shortages of veterinarians who have advanced training. The committee noted a difference between workforce shortages and unmet needs for veterinarian positions. Societal needs for veterinary expertise are substantial and growing, but the potential contributions of veterinary medicine are not realized because appropriate positions in relevant sectors are lacking.

As the committee examined the question of whether the supply of and the demand for veterinarians were in balance in a given sector, it struggled to rationalize the apparent need for veterinary services with the economics of today’s veterinary marketplace. Personnel shortages occur when well-paid positions are not filled. Such shortages exist, for example, in industry, where employers cannot fill high-paying positions with veterinarians who have advanced training in biochemistry, biochemical mechanisms of diseases, basic pharmacology and toxicology, pathology, laboratory-animal medicine, and regulatory toxicology. These experts are in demand and receive salaries that are well beyond those of professorial ranked faculty. Similarly, veterinary colleges are in need of basic scientists who can leverage extramural research support for programs. In the committee’s view, opportunities for highly-trained veterinarians in industry and the basic sciences are growing, and the new and vacant positions represent a clear shortage because there are few qualified individuals to fill those jobs. Those shortages can be addressed by equipping future veterinarians with the skills required by these positions and by eliminating barriers to their employment.

In contrast, unmet needs occur in settings where well-paying veterinary positions are lacking. That includes situations in which positions exist, but salaries are too low to attract candidates, as well as instances in which expertise in comparative medicine might be relevant, but positions that explicitly require veterinary expertise do not exist. By expanding appropriately-paid employment opportunities that use different kinds of veterinary skills, including rethinking how veterinary services are provided, society can better capture the benefits of veterinary expertise. For example, in situations where the low density of small farms with marginal resources cannot financially support positions for full-time food-animal (FA) veterinarians, alternatives to conventional veterinary practice, including an expanded use of technicians under the supervision of veterinarians, will be important. In wildlife and ecosystem health, development of thoughtful measures to manage the health of terrestrial and aquatic wildlife, conservation of threatened and endangered species, and control of emerging infectious and toxicological agents could benefit from greater involvement by veterinarians. Veterinarians are not prevented from entering those fields now, but developing sustained funding for veterinary positions will require efforts to promote a wider understanding of the value of veterinary services among public and philanthropic supporters of wildlife and the environment. As noted in chapter 10, the goal of balancing supply and demand is to match jobs that require particular kinds of skills with persons who have those skills.

Strictly on the basis of financial return on educational investment as an indicator of the market demand for veterinary expertise, there is no substantial profession-wide shortage of veterinarians. Increases in salaries and benefits are smaller than the increases in the cost of a veterinary education for students. According to the 2011 AVMA Report on Veterinary Compensation, companion-animal-exclusive practitioners’ mean and median incomes are increasing. However, companion-animal-practice income growth has slowed. In recent years, public-practice and corporate-practice incomes have increased slightly. Food-animal exclusive, equine, and mixed-animal practice median incomes were growing before 2007, but in 2007-2009 a sudden decline occurred.

Unmet needs for appropriately-compensated positions exist in the public sector for veterinarians who have specialized training in epidemiology, food safety, wildlife and ecosystem health, and public health. Jobs in those fields generally offer salaries that are much lower than those in the private sector, many have salaries that are too low to attract top candidates, and some are not advertised with a requirement for a veterinary degree, so many of the positions remain unfilled by veterinarians. Public-practice veterinarians are essential for maintaining the safety of foods of animal origin and for controlling diseases of wildlife and livestock, including zoonotic diseases. An insufficient workforce of public-practice veterinarians places at risk the health of American citizens, the well-being of the nation’s food-animal industry, the health of U.S. wildlife resources, and the U.S. economy.
Recommendation 1A: Industry veterinary workforce shortages can be addressed by deeper partnerships between academic and industrial employers of veterinarians. Academe should more actively seek industry biomedical research partnerships, student mentoring, and opportunities in the curriculum to expose students to corporate practice. The establishment of student clubs for clinical pathology and laboratory-animal science at veterinary colleges, as recently initiated by the American College of Laboratory Medicine, the American Society of Laboratory Animal Practitioners, and the American College of Veterinary Pathologists (ACVP) is a favorable development, as is industry support for internships and training positions through the ACVP/STP [Society of Toxicologic Pathology] Coalition for Veterinary Pathology Fellows. Industrial externships could bring greater exposure to career opportunities in pathology, laboratory animal medicine, and toxicology. The Virginia-Maryland Government and Corporate Practice track is another example. Given the limited resources of veterinary colleges, consideration should be given to partnering with such programs or tracking options in veterinary colleges to offer the best opportunity for channeling students into careers in laboratory-animal medicine, pathology, and comparative biomedical research.

Recommendation 1B: To meet the needs for positions for veterinarians in public practice, the committee urges state and federal governments to re-examine their policies on remuneration, recruitment, and retention of veterinarians.

It is encouraging that the U.S. Office of Personnel and Management has formed the Talent Management Advisory Committee to bring agencies together in a forum to discuss a strategic workforce plan regarding current and future federal needs for veterinarians. State and federal agencies, especially ones that target food safety and wildlife and ecologic sustainability, should articulate the full value of the veterinary profession to their missions and take steps to support a coherent plan to strengthen the profession’s role in research, food safety, animal welfare, public health, and ecologic sustainability. The public interest is put at significant risk when attention to workforce needs related to these issues is not addressed. A number of personnel policies—from recruitment strategies and hiring practices to retention initiatives, including child care and parental leave that might attract female candidates—should change to improve the federal government’s opportunity to employ veterinarians.

Recommendation 1C: The Association of American Veterinary Medical Colleges, American Animal Hospital Association, and American Veterinary Medical Association should develop realistic strategies for meeting companion-animal veterinary medical workforce needs. Building such a strategy requires reliable national data on consumer demand for companion-animal care, the economics of private practice, the role of veterinary technicians in extending companion-animal care, and the implications for the profession of growth in accredited and non-accredited veterinary schools both inside and outside the United States.

The demand for a veterinary education among U.S. citizens remains high, yet the economic reality regarding student educational costs in relation to modest practice incomes is worrisome. companion-animal veterinary medicine has come to dominate the curriculum and resources of veterinary schools, sometimes to the detriment of other fields of veterinary medicine, so it is important to understand as clearly as possible the demand for needs for companion-animal services, and to plan accordingly by developing a strategy to support the clinical faculty, specialists, and others required to train new companion-animal practitioners and companion-animal paraprofessionals. A growing part of the future companion-animal veterinary workforce will consist of veterinarians who graduated from colleges outside the United States. The impacts of that trend on U.S. veterinary schools, companion-animal practitioners, and the quality of and access to a veterinary education, particularly as the profession attempts to increase the numbers of underrepresented minorities in its ranks, must be studied closely. This analysis must be approached in the context of meeting the need for veterinary services in all sectors of the profession, and seek to balance the actual demand for companion-animal veterinary medical practitioners with the capacity to meet those needs within current and future economic realities.

CONCLUSION 2: The decade-long decline in funding of education and research has jeopardized the profession’s future capacity to serve societal needs.

Veterinary medicine has made immense contributions to human well-being but is losing the breadth of its intellectual base as a consequence of reduced public funding for veterinary education and research. The trend jeopardizes the vigor of veterinary medicine, threatens the profession’s future, and urgently requires
a change in direction. The profession will not be able to fulfill its responsibilities to society without maintaining a pool of high-quality scientific investigators and robust research programs.

The number of students who are exposed to sophisticated fundamental and applied research is declining. Crucial investments in the infrastructure of basic and translational research are not being made, and the creation of new veterinary basic-science faculty is fading. Research is declining in veterinary colleges on such topics as molecular genetics, molecular oncology, gene therapy, stem cells, immunology, virology, toxicology, pharmacology, and epidemiology, and the profession's responsibilities in food safety and ecosystem health are declining. It is in those fields that some of the most important advances in comparative medicine can be expected and will define the profession in the years to come.

**Recommendation 2:** Veterinary academe should increase its commitment to research, developing future faculty, and encouraging current faculty to work across disciplinary and professional boundaries. The Association of American Veterinary Medical Colleges is well positioned to take on this challenge.

Veterinary schools need to demonstrate a commitment to building the kind of faculty that can lead cross-disciplinary and inter-professional studies, to find partners to support graduate training, and to develop collaborations with entities outside the veterinary schools to seek research and other support. Effective research programs require long-term commitments by teams of investigators.

In addition, research-based educational environments draw students to research careers, an essential process for sustaining the profession's intellectual core. The report, *National Need and Priorities for Veterinarians in Biomedical Research* (NRC, 2004) offers several suggestions for attracting students to research careers, including acquainting students with research opportunities throughout veterinary school, including in the curriculum, actively seeking students with an interest in research, and working to find support for post-graduate research training. There are unique opportunities for the profession to build research programs in the biomedical sciences. Comparative veterinary medicine addresses a broad spectrum of spontaneously-occurring diseases that are homologues of diseases in humans and could be funded by the National Institutes of Health (NIH). Many spontaneous tumors in dogs and cats are models of tumors in humans and provide excellent opportunities for studying basic cancer biology and testing cancer therapeutic agents. Spontaneous models of metabolic diseases in pets are also available and uniquely important for gene therapy and stem-cell studies. But these opportunities and resources have been underutilized.

The total NIH funding of the nation's 28 veterinary schools and colleges in 2010 was about $280 million—less than the NIH funding for any one of the nation's top medical schools. Veterinary schools must improve their ability to attract funding if they expect to remain in the mainstream of biomedical research, by hiring more DVM-PhD mentors to attract grants and provide graduate training of veterinarians at the doctoral level, both in the biomedical field and in research projects of primary importance to animals.

**CONCLUSION 3:** The current return on investment for veterinary education is unsustainable and the cost of veterinary education is at a crisis point. The profession may be at risk for lowering the quality of applicants to the profession and the quality of veterinary education. The veterinary profession has been slow to respond to these challenges.

Starting salaries in private practice increased by 148% beyond inflation in the 20 years from 1987 to 2007, but mean debt increased by 285% in the same period. The financial return on investment in veterinary education is below that of other professions for which students might be qualified. For about the same number of years of training, veterinarians make much less than dentists and about the same as pharmacists, who can graduate with the required PharmD in as little as 6 years. Although there is some risk in using current earnings information to approximate expected lifetime earnings of current students, it is clear that the financial reward for a veterinary education is well below the benchmarks of other types of training in health professions. The committee agrees that a foreboding scenario exists: the ratio of student debt-to-average starting salary is more than 2 to 1 (Figure 11-1).

In the absence of additional growth in salaries or reduction in costs of a veterinary education, the return on investment for a veterinary education may continue to decrease. Eventually, more students will recognize the disjunction between tuition and income, and the quality of applicants to veterinary schools will decline. Veterinary medicine needs to make a much better case to the public in regard to
its value in state and federal budgets and to be more creative and effective in seeking sources of revenue besides increases in tuition and class sizes.

**Recommendation 3a:** Professional veterinary organizations, academe, industry, and government should work together with a sense of urgency to stimulate the collective actions needed to ensure economic sustainability of veterinary colleges, practices, and students. A national consortium or committee should be jointly supported to bring together initiatives that focus on the economic sustainability of the profession in all sectors of service, education, and research. Previous groups have called for change and coordination in the nation’s approach to veterinary education and its costs. In 2011, the North American Veterinary Medical Education Consortium report Roadmap for Veterinary Medical Education in the 21st Century: Responsive, Collaborative, Flexible provides a wide array of options. To thrive in an era of economic constraints, veterinary schools and colleges must develop innovative teaching methods and new collaborative relationships, and the profession must develop new business models. A consortium of key veterinary organizations, deans, industry, government, and economists is needed to seek solutions that address the sustainability of the profession and of veterinary service to society.

A central issue for the future of veterinary medical education is the role of research in the coming years. New organizational models and methods to address research frontiers will be needed to assure the intellectual integrity of veterinary education. The profession’s ability to respond to evolving threats to animal and human health depend on attracting and sustaining outstanding scientists to the disciplines that support veterinary medical education.

**Recommendation 3b:** As part of a comprehensive strategy to address the economic sustainability of the veterinary profession, the working groups appointed by the consortium should create nationally shared curricula. The growth of distance education and webinars offers an opportunity to achieve this goal. The emerging power of distance education provides the greatest opportunity for advancing food-animal veterinary education at a comparatively modest cost. Webinars and similar technologies can lead to continuing-education credits for veterinarians. Teaching veterinary students from other developed and developing countries should be encouraged to extend the reach of U.S. academic programs and to capture the potential revenue that these sources can generate.

**Recommendation 3c:** U.S. veterinary colleges should evaluate and implement alternative options for the delivery of veterinary education and research.
Veterinary teaching is evolving and some non-traditional models are now used by AVMA-accredited veterinary colleges. Alternative models for veterinary education, and those that spread the cost of specialty training, in particular, need to be evaluated by inter-professional committees to identify those that hold promise for improving the efficiency of veterinary medical education and research in the United States. Some of the alternatives that should be evaluated further are described below.

**An Alternative Model for Teaching Hospitals**

Small-animal teaching hospitals have become the profession’s secondary-care and tertiary-care centers. Concurrently, they have expanded their roles in training residents for specialty-board certification, which requires the expense of additional equipment and faculty to supervise residency programs. The costs of operating a specialized-care center could be readily passed on to animal owners if veterinary schools provided instructional opportunities at comprehensive small-animal medical centers in sizable urban or metropolitan areas.

High-quality specialty practices developed through university-driven or university-private sector collaborations in which veterinary schools or colleges hold a controlling and standard-setting interest can offer exceptional resources of both infrastructure and highly-trained specialists. Large urban or metropolitan teaching hospitals should provide core services in community and specialty practice. Veterinary faculty of such centers would have more time to pursue basic and clinical research, conduct clinical trials, and teach evidence-based medicine to veterinary students and residents, relying on a great array of cases, state-of-the-art instrumentation, specialized support staffs, and data-retrieval systems made available by the associated university. Likewise, the instruction of veterinary students and residents in equine medicine and surgery would be best accomplished in clinics situated in areas that have adequate populations of horses to ensure the large caseload needed for strong teaching and clinical-research programs.

**Alternative Models for Specialty Training**

The main rationale for state support of veterinary schools is to train entry-level veterinarians. However, increasing numbers of graduates seek advanced training—whose requirements are dictated by specialty boards—and this causes veterinary schools to assume increased costs. Public support of faculty engaged in specialty training is minimal or nonexistent in most state budgets, and there is essentially no federal support. Therefore, the schools need to become more independent of the influence of specialty boards. In addition, veterinary schools and colleges must work together through partnerships and group efforts, including other organizations and industry, to leverage resources and capabilities for providing alternatives to specialty training in veterinary schools. There are opportunities to meet the clinical challenges through inter-school collaborations; by relying more on talent in private veterinary practices, specialty practices, industry, and agencies; and by enlisting the support of government, NGOs, and other stakeholders.

**Alternative Models for Matriculation and Training**

Most veterinary students in the United States are admitted to veterinary schools after completing pre-veterinary studies over the course of a 4-year undergraduate program. After graduation from veterinary school, many students seek internships and residencies in the belief that they will increase their earnings. Few students decide to stay in school for another 4 years (or more) in pursuit of a PhD. Although the dearth of support for graduate training is one reason, the overall costs and length of time involved before a person can capitalize on the training are so great as to be deterrents. One potential solution to the problem is to encourage more students to apply to veterinary school after only 1-2 years of undergraduate study. In the UK, students may apply directly after high school and enter a 5-year veterinary curriculum. American students who have sufficiently strong academic records are also admitted directly from high school into 5-year veterinary curricula in the UK. Those students spend 3 years less than the norm in most programs in the United States and this fuels the argument for reducing the length of pre-veterinary education in this country.

**Joint Degree Programs**

Another recommended approach to address the need for more veterinarians who have advanced degrees is to develop more joint degree programs in veterinary colleges and schools. There are now several joint DVM-MPH, DVM-PhD, and DVM-MBA programs. The University of Pennsylvania’s School of Veterinary Medicine illustrates the effectiveness of this approach. It has had a joint VMD-PhD program in place since
of its 63 graduates, 85% are engaged in research and about two-thirds are in academe. Seeking funding to increase the number of such programs would have the combined effect of making a PhD degree more attractive, increasing the pool of potential veterinary faculty, and broadening the base of veterinary medicine. For DVM-PhDs to succeed in academe there is likely to be a need for postdoctoral training of most PhDs pursuing this career path. Facilitating that avenue and exposure to a variety of career options for DVM-PhDs should be core components of such dual-degree programs.

CONCLUSION 4: The veterinary profession is losing its presence in food-animal production and care.

With the changing nature of food-animal production in America, the demand for traditional veterinary services has declined, creating two related problems: how to develop production medicine to serve the dynamically-changing and increasingly-intensive livestock and poultry industries; and, how to provide veterinary services in the rural United States where fewer and more widely dispersed farms make it difficult for food-animal clinicians to remain in practice.

Veterinary academia has been slow to respond to educational needs in food-animal production medicine. Large producers who dominate the livestock industries seek veterinarians who are either exclusively or predominantly committed to food-animal practice, who can understand production systems, can read farm records and can use them to make decisions aimed at increasing herd health, productivity, and the overall profitability of the farming operation. It is these services producers seek and for which they are willing to pay. At the same time the profession must develop its role in monitoring food safety, drug residues, animal welfare, nutrient management, and stewardship of the environment.

If the profession does not move more deliberately in this direction it is in danger of relinquishing its role in animal production to others who are able to consider the economic needs of producers but who have less understanding of the complexity of animal health and public health.

Recommendation 4a: To increase the economic value of veterinary services to producers, the education of food-animal practitioners should be reoriented towards herd health and interventions aimed at improving the financial health of the farm operation. Veterinary schools and colleges should work together to achieve this goal by creating centers of emphasis on food-animal medicine.

The most compelling case for creating centers of emphasis is in those disciplines where small numbers of students are involved and where it is difficult for each school or college to justify faculty costs. Such is the case for food-animal medicine. As the livestock industry has consolidated, it has also divided production into specialized units. Consequently, no one school or college can afford faculty expertise in all the specialized needs of every species. Schools and colleges should collaborate to create a portfolio of on-line courses on the diversity of specialized educational needs in production medicine. These programs should include all food-animal species including small ruminants. Practical application of this knowledge should take place at centers of emphasis where students can gain experience in management and research in food-animal health and productivity.

There are models of successful centers in which advanced practical training and research is available, such as the Agricultural Research Service Meat Animal Research Center at Clay Center, Nebraska; the Swine Center of Excellence at Iowa State University in conjunction with the Audubon-Manning Veterinary Clinic; the University of California-Davis Dairy Center at the Veterinary Medical Teaching and Research Center at Tulare, California; and the recently formed National Center of Excellence in Dairy Production Medicine Education for Veterinarians funded by USDA that is a collaboration among the veterinary schools of the Universities of Georgia, Minnesota, Illinois, and Kansas State University. Forming centers of emphasis (or excellence) is not a new idea, but it needs to be revisited and nurtured by veterinary leaders and affected stakeholders. In addition to advancing the quality of food-animal education, the committee sees the advantages of a strategically-planned network of cooperating centers for reducing a duplication of effort, faculty salaries, and facilities.

The centers will develop only as entrepreneurial deans and faculty initiate inter- institutional discussion, formulate creative ideas, use distance education, and attract funding from industry, public-health agencies, foundations, international organizations, and federal and international governments. Maintaining flexibility in center programs will be an on-going challenge. A system of regular review or accreditation should be put in place at the time centers are created.
**Recommendation 4b:** The veterinary profession should formulate new ways of delivering cost-effective services to rural America, using veterinary technicians to extend animal health services to underserved areas.

In rural areas where there are too few farms to support a full-time veterinarian, the profession should develop a system of animal-health care that uses digital and information technologies to integrate licensed clinicians with rigorously trained paraprofessionals. For this to be accomplished, the AVMA and other professional associations will need to enter a dialogue with officials to modify state practice acts to permit credentialed veterinary technicians to administer livestock-health services provided that they are subject to collaborative oversight (and constant communication) with licensed practitioners who may be in distant locations. Veterinary technicians and other paraprofessionals working with food-animal veterinarians in this way have the potential to provide affordable, high-quality care to rural America, and their role should be expanded. Other fields of medicine have developed paraprofessionals, such as nurse practitioners and certified nurse anesthetist, who do not compete with but rather compliment and extend the influence of the professionals overseeing them. In food-animal practice, such a system can also be used to strengthen the nation’s capacity for animal-health surveillance and emergency planning in rural America. The system has the potential for private-public partnerships.

**CONCLUSION 5:** Global food security is one of the most pressing challenges of the 21st century. The food and water security and safety concerns confronting the world today are far more daunting than anything veterinary medicine has previously had to confront. Because these challenges are enormously complex, they will require the veterinary profession to engage in interdisciplinary and interprofessional One Health solutions.

It is increasingly clear that agricultural science, veterinary medicine, and other disciplines must work together to deliver sufficient, safe food to sustain the world’s growing population. The problems need to be addressed by a combination of veterinary research, academic program innovation, advances in and adoption of technology, knowledge extension, and veterinary faculty and practitioner professional development. These issues need greater public attention, greater financial resources, and a focused strategic approach.

In 2011, the world’s population reached 7 billion, on its way to 9 billion by 2050. Almost all the growth will be in the developing world where urbanization is proceeding with a speed and intensity that is unprecedented in human history. The urban transition is generating wealth, greatly increasing demand for animal protein, and forever changing the developing world’s agricultural systems. Presently, rising demand is being met by expanding populations of low-producing animals. This is environmentally destructive and unsustainable. To meet demand, protect the environment, and make systems more sustainable, the veterinary profession in the United States should help to increase the efficiency of livestock and poultry production, increasing animal yields while reducing their numbers. Animal-health hazards that accompany increased intensity of production in warm humid climates must be understood and anticipated and outbreaks of new and re-emerging infectious diseases controlled as they can jeopardize human health and the resilience of food security systems. Issues of waste recycling must also be solved. All of these challenges are immensely difficult and further complicated by climate change. To find solutions will require the widespread collaborations that are embodied in the concept of One Health.

The challenges substantially expand the traditional roles of veterinary medicine and redefine the profession’s needed competencies. The veterinary academe appears hesitant to emphasize the One Health initiative and global food security, because few well-paying job opportunities are advertised for graduates. However, the task of meeting the growing needs for safe, nutritious, and affordable food for the world’s growing population is urgent and must be accomplished.

**Recommendation 5:** Veterinary medical organizations and the deans of veterinary colleges should work to increase the visibility, standing, and potential of the profession to address global food security. Establishing a One Health think tank with the goal of advancing food-animal husbandry and welfare policies, ecosystem health standards, and the capacity of the veterinary profession in the developing world would help future generations of veterinarians to collaborate across professions, disciplines and cultures. A part of this body should also consider the necessary competencies required of U.S. veterinary graduates to address the global challenges of food and water safety and security, and the health of wildlife and ecosystems.
Society tends to view veterinary medicine through the narrow lens of companion-animal medicine. The profession has not done enough to expand recognition of its immense responsibilities in addressing global food security and resilience. Tackling the multiple dimensions of One Health and sustainable food security will require a new, broader definition of veterinary medicine, of its foundational competencies, and the focus that veterinary research must take. To accomplish that, deans should work together across campuses, organizations, and professions to define key One Health competencies that can be adopted into curricula and research program models.

The Association of American Veterinary Medical Colleges (AAVMC) should lead an effort with the AVMA and other professional organizations, veterinary and otherwise, to change our research and professional development programs to address local, national, and global cross-disciplinary challenges.

Examples of activities to which veterinarians could contribute include Feed the Future, the U.S. global-hunger and food-security initiative, and PREDICT, a global early-warning system to detect and reduce the effects of emerging diseases that move between wildlife, domestic animals, and people. The Food and Drug Administration is beginning to implement the Food Safety Modernization Act, which will require veterinary medical research on ways to prevent food contamination and on issues of food safety on the farm. Other programs are funded by different agencies to address the effects of climate on ecosystem health, wildlife, and the movement of plant, animal, and human diseases.

**A Profession with a Unique History and Bold Future**

The chaos of interdependent societies of the early 21st century—with soaring human populations, global warming, exotic-species invasions, overharvesting of wildlife, infectious-disease outbreaks, and chemical contamination—has created opportunities for veterinary medicine to be more relevant than at any other time in history.

Veterinary medicine began as a profession that focused on the health and utility of horses; it then helped to improve the productivity and well-being of food animals and the safety of milk, meat, and eggs; later, it undertook basic research and improved animal health and evaluation in concert with academic, government, and private laboratories; it countered diseases of pet animals and helped to sustain the human-animal bond; it enhanced the health and reproduction of zoo animals; and now it is increasingly caring for entire communities of free-ranging wildlife in a host of ecosystems. Times are challenging, but the veterinary profession continues to create its own future and now faces many options for remaining relevant to societal needs and being economically sound. The broad assignment is clear: the profession must collaborate within and beyond its bounds, and it must proclaim and demonstrate its relevance to the public and to decision-makers to ensure its continued success.

**Foundation News**

**Foundation Mission**

The Mission of the Foundation is to award high quality research grants that will increase the body of knowledge in laboratory animal science and medicine.

**ACLAM Foundation at the Forum**

The Foundation will host multiple events at the Forum. With this many opportunities to support the Foundation, you’re certain to find an enticing activity. All events will be ongoing during the week with culmination on Tuesday evening during the dinner reception. Please consider participating in any or all of these events. If you are unable to attend the Forum you may designate a proxy to bid on items for you. Payment must be made at the time of auction close. With all of these activities, we depend on our volunteers for assistance. Please contact Gregory.boivin@wright.edu to volunteer.

**On-Line Auction:** Three fabulous vacation packages will be auctioned off and will be closing on Tuesday evening May 6th. These include our popular destinations to Colorado, St Martin, and Marco Island.

**Silent Auction:** A limited silent auction will be held this year. Items will include a spa package from the hotel, and ACLAM swag.

**Raffle:** Please consider donating an item and/or volunteering to help with ticket sales. In addition to donated items, the raffle will include an iPad and 4 cash prizes ($400, $300, $200, and $100). Raffle tickets are $5.00 each, 15 for $50 or 30 for $100. If you are unable to attend the forum and would like to purchase tickets please contact Greg Gregory.boivin@wright.edu or Shannon stutlersa@peoplepc.com.
**Poster:** Please submit an abstract of your poster to Jeanne Wallace jeanne.wallace@vanderbilt.edu. Abstracts should be less than 250 words in length, and should not include charts, figures or pictures. Posters accepted for other venues are acceptable for presentation at the Forum.

**Golf:** The ACLAM Foundation Golf Tournament will be held at the Coeur d'Alene Golf Course once described as America's Most Beautiful Resort Golf Course by Golf Digest. This world renowned course is famous for its floating green. The green fees are being offered to us at a special discount so this is an excellent opportunity to play the course as either a single or as part of a scramble. Please contact Greg prior to April 10th to coordinate a tee time. We only have availability for 24 golfers so registration will be on a first-come basis. See the attached registration form for more information.

**Wine Tasting:** Looking for an event to participate in on Tuesday May 6th? Please consider joining many of your colleagues for a wine tasting event. The event will be hosted at the hotel and will be led by Solemner Eric Cook.

**Fleece Jackets:** New this year please see the attached order form for purchase of a navy blue fleece jacket with the ACLAM logo. Please note that these are pre-order only for the Forum, or you can have them delivered to your home if you are not attending the meeting. Limited time offer!

**Science Update**

The ACLAM Foundation received 73 Letters of Intent in December for our regular cycle solicitation. Thirty-one proposals were accepted for Full Proposal review. These will be reviewed during March and early April with completion of the review Sunday May 4th at the Forum. The Foundation anticipates spending over $150,000 for grants this year.

All grants have been completed prior to 2011. After a great successful start at last year’s Forum we are happy to have our grant recipients from last year present their results at the Idaho Forum. We are very excited about the continued productivity of our grantees and the impact they are having on our field.

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**15th ANNUAL ACLAM FOUNDATION BENEFIT RAFFLE**

Purchase raffle tickets for the Thirteenth Annual ACLAM Foundation Benefit Raffle

- **Grand Prize** - An Apple iPad valued at $599
  - After the raffle, the iPad will be purchased and shipped directly to the winner. This will allow for some customization, plus the addition of upgrades beyond the allotted $599 (at the winner’s expense). If the winner of the iPad prefers, they may receive a $600 cash prize instead of the iPad.
  - Second prize – $400 cash
  - Third prize – $300 cash
  - Fourth prize – $200 cash
  - Fifth prize – $100 cash
  - You have five chances to win!!!

Raffle tickets are $5.00 per ticket or 15 tickets for $50.00 or 30 tickets for $100.00.

Tickets will be sold at the Forum up until the drawing, BUT – you do not have to be present to win. So even if you are not able to attend the Forum, please consider purchasing raffle tickets.

For those unable to attend the Forum, purchase raffle tickets by email. Contact Greg Boivin Gregory.boivin@wright.edu to request tickets. You may purchase tickets by e-mail request through Friday, May 2, 2014.

Thank you for your generosity and participation in helping to make this event a success!!!

Greg Boivin

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**Fund Raising Update**

Supporting the ACLAM Foundation is easier than ever this year with the opportunity to donate online through the ACLAM website. Funds raised this year from individual donors will allow us to only fund between two and four grants next year. As you can see above we have a huge commitment to fulfill. So, if you have not yet made a contribution in 2014 please consider this appeal for a donation to help fund more grants in 2014 and 2015. Beyond just a donation...
this year, please consider a Presidents Circle Pledge ($5,000 over 10 years) to help sustain the great work of the ACLAMF. Remember that 100% of your gift goes to funding these studies! Multi-year pledges help the Foundation Committee with planning, so please consider a pledge this year. The Foundation Committee thanks you for your generosity and looks forward to hearing from you soon. The Foundation has historically benefitted from institutional donations but given the economic climate we cannot be assured that these much-appreciated gifts will be forthcoming in 2014. Your contributions will ensure the Foundation is able to fund as many meritorious grants as possible. Please send your donation to our Development Officer, Shannon Stutler at:

ACLAM Foundation
20 MacKinnon Place
East Lyme, CT 06333

or,
Check out the new ACLAM website to donate using your credit card online at http://www.aclam.org/foundation. Should you have any questions about donating or making a pledge, email Shannon at stutlersa@peoplepc.com.

**AAALAC Honorarium**

Does your employer preclude you from taking outside honoraria? Ever wonder what you could do with your AAALAC honorarium? The ACLAM Foundation as a non-profit organization is able to receive these honoraria in your name. Please join some of your colleagues and donate honoraria to the Foundation.

**Open Positions**

- For a complete description of the following positions and application information, please go to the Open Positions page of the ACLAM website at http://www.aclam.org/jobs. NOTE: Ads are listed chronologically by posting date, most recent first, and will appear for approximately 90 days.
- Contact Nanette Kleinman at 216-496-2903 or nanettekleinman@gmail.com for additional information about ACLAM Newsletter and website ad posting.

**Faculty Position in Comparative Medicine**

**Department of Comparative Medicine**

**Stanford University School of Medicine**

**Stanford, CA**

The Department of Comparative Medicine seeks to fill a faculty position at the Assistant or Associate Professor level in Stanford School of Medicine’s Medical Center Line. Candidates should have a D.V.M. or V.M.D. veterinary specialty board certification/eligibility and/or an advanced degree (PhD, MPH, or other). The major criteria for appointment for faculty in the Medical Center Line shall be excellence in the overall mix of clinical care, clinical teaching, scholarly activity that advances clinical medicine, and institutional service appropriate to the programmatic need the individual is expected to fulfill.

The Department of Comparative Medicine is a department within the School of Medicine. The department has an ACLAM-recognized residency training program and, in addition to its academic functions, also provides the clinical care and oversight of Stanford’s AAALAC-accredited research animal program. Applicants should have a strong interest in teaching laboratory animal biomethodology and veterinary clinical care, with additional interest in investigative scholarship.

**Director / Associate Director Laboratory Animal Medicine – Attending Veterinarian**

**Ohio**

The incumbent will provide clinical laboratory animal medicine and surgical support for nonclinical studies in a GLP compliant, AAALAC registered facility and will facilitate study design and execution of study activities in order to meet client program milestones and timelines. The incumbent will maintain IACUC membership and will be responsible for the care and well-being of all animals in vivarium, assuring compliance with all regulations concerning animal care. The incumbent will adhere to and facilitate compliance with GLP regulations. The incumbent will supervise and assess performance of professional and technical staff, applying improvements needed to achieve industry best practices. Will participate in client meetings and pathology peer review meetings.
Will serve as a scientific resource, insure that activities in compliance with GLP regulations and Standard Operating Procedures (SOPs) as applicable. Will provide scientific expertise to Business Development, Business Management and Client Services Groups and will identify and develop new business ventures and engage in client visits to facilitate business opportunities.

Executive Director, Center for Laboratory Animal Medicine and Care
University of Texas Health Science Center (UTHealth), Houston, TX

UTHealth invites applications for the position of Executive Director of the Center for Laboratory Animal Medicine and Care (CLAMC). The Executive Director reports to the Executive Vice President of Academic and Research Affairs and is part of the senior management team dedicated to maintaining UTHealth's prominent position in research, education, and service.

The Executive Director is responsible for leadership and best practices in animal care and use at UTHealth, an Association for Assessment & Accreditation of Laboratory Animal Care International (AAALAC-I) accredited program with the following resources:

1. A highly motivated team of approximately 50 that includes diplomates of the American College of Laboratory Animal Medicine (ACLAM), other veterinarians, and various certified professional staff and technicians
2. An ACLAM approved laboratory animal medicine residency training program consortium jointly operated with Baylor College of Medicine and MD Anderson Cancer Center
3. State of the art facilities of approximately 80,000 ft² in six primary campus locations

Candidates should apply online at:
http://jobs.uth.tmc.edu/applicants/Central?quickFind=96292

Veterinary Medical Officer
Department Of Veterans Affairs
Veterans Affairs, Veterans Health Administration, Palo Alto, CA

Job Announcement Number:1027818KD

SALARY RANGE: $115,613.00 to $150,291.00 / Per Year

OPEN PERIOD:
Thursday, January 23, 2014 to Wednesday, February 12, 2014

SERIES & GRADE:
GS-0701-14

POSITION INFORMATION:
Full Time - Excepted Service Permanent

DUTY LOCATIONS:
1 vacancy in the following location: Palo Alto, CA

WHO MAY APPLY:
United States Citizens

SECURITY CLEARANCE:
Not Applicable

SUPERVISORY STATUS:
Yes

JOB SUMMARY:
Vacancy Identification Number (VIN): 1027818

Please follow the link below for more information and to apply:
https://www.usajobs.gov/GetJob/ViewDetails/359415000

Director I Senior Director Pathology
Ricerca Biosciences, Concord, OH

Founded in 1986, Ricerca Biosciences offers a comprehensive suite of non-clinical discovery support and integrated R&D services to support drug candidate development from lead identification through IND and NDA submission.

Duties
• Interpret study results and preparation of study reports for anatomic and/or clinical pathology.
• Facilitate study design and execution of study activities in order to meet client program milestones and timelines
• Design protocols for studies to evaluate the potential toxicity of chemicals and pharmaceuticals.
• Initiate, monitor and/or supervise studies or study phases as deemed necessary.
• Adhere to and facilitate compliance with GLP regulations.
• Supervise and assess performance of professional and technical staff and pathology groups
• Perform or consult regarding Lab Animal Veterinary medicine.
• Participate in client meetings and pathology peer review meetings.
• Serve as a scientific resource.
• Insure that activities in compliance with GLP regulations and Standard Operating Procedures (SOPs), as applicable.
• Provide scientific expertise to Business Development, Business Management, and Client Service groups.
• Identify and develop new business ventures and engage in client visits.

Senior Clinical Veterinarian
Center of Comparative Medicine and Pathology
Weill Cornell Medical College and the
Memorial Sloan-Kettering Cancer Center
New York, NY

The Center of Comparative Medicine and Pathology (CCMP), serving both the Weill Cornell Medical College and the Memorial Sloan-Kettering Cancer Center is seeking a laboratory animal specialist. Responsibilities include provision of clinical care and anesthesia to laboratory animals; oversight and participation in animal health monitoring, quarantine, importation and surgical programs; IACUC membership and associated activities; and participation with other CCMP professional and senior management staff in programmatic development initiatives, education programs and postdoctoral training in laboratory animal medicine and comparative pathology. Collaborative research opportunities are available and encouraged.

CCMP is responsible for the care of over 220,000 animals daily, housed in eight facilities in Manhattan, Queens and Westchester County in the NY metropolitan area as well as Doha, Qatar. Programs are centrally managed, AAALAC accredited, and supported by a multi-disciplinary diagnostic laboratory. CCMP has a staff of more than 200, including 8 veterinarians (both ACLAM and ACVP board-certified). Individuals interested in joining a growing, academically oriented animal resource program with state-of-the-art facilities serving renowned institutions are encouraged to apply.

Assistant Director of Veterinary Resources & Research Support SNPRC
Southwest National Primate Research Center, San Antonio, TX

The Southwest National Primate Research Center (SNPRC) located at Texas Biomedical Research Institute, in San Antonio, Texas, invites applications for the Assistant Director of Veterinary Resources and Research Support position. Individual will be responsible for the daily supervision of the veterinary professional and technical staff, and will assist the Associate Director in management of all Veterinary Resources and Research Support. The candidate will also be a key person in assessing and developing SNPRC processes, daily scheduling of research support, and will interact with intramural and extramural investigators. Individual will report directly to the Associate Director, Veterinary Resources & Research Support, Southwest National Primate Research Center.

Apply online at http://www.txbiomed.org/about/employment.

Senior Director, Laboratory Animal Sciences
Allergan Pharmaceuticals, Irvine, CA

The Senior Director, Laboratory Animal Sciences will be responsible for management of a state-of-the-art animal housing and husbandry operation that supports drug discovery and development projects in multiple vivarium facilities. The incumbent will provide clinical oversight and veterinary care for a variety of large and small laboratory animal species, including non-human primates. Duties include health monitoring, preventive medicine, quarantine, diagnosis, and treatment for research animals, including the primate colony. S/he will be responsible for budget, manpower oversight, resource planning, vendors, and physical plant issues in overseeing the vivarium operations. This individual will also have responsibility for maintaining AAALAC accreditation and assuring worker safety and compliance with FDA, GLP, State and USDA animal welfare regulations and will serve as backup to the Institutional Veterinarian.

Application: Karen Fulmer or Brett Phillips
kfulmer@benchinternational.com
brett@benchinternational.com

Staff Veterinarian
Bristol-Myers Squibb, Mt. Vernon, IN

Specific responsibilities will include providing supervision of veterinary scientists; implementing staff training and development to support regulatory compliance; assist with experimental protocol design; providing professional and technical support to the animal users; maintaining the health for all...
laboratory animals; conducting and interpreting laboratory procedures including electrocardiography and ophthalmoscopy; providing clinical support to the safety assessment and research groups; performing, instructing, or overseeing surgical procedures; and overseeing and evaluating the sentinel and vendor animal health quality assurance programs. Authoring, revising, or reviewing standard operating procedures, guidelines, and research reports are required as is participation in a rotating on call schedule for weekend, holiday, and emergency coverage. These responsibilities are conducted in compliance with FDA and/or USDA regulations and guidelines to maintain AAALAC Accreditation. This position will require the employee to work with chemical, radiological, or biological agents that may be hazardous to health if mishandled. Employees will be required to follow all safety procedures and use personal protective clothing/equipment where specified.

To apply for this position, go online to http://bms.com/careers/Pages/home.aspx and register to view current career openings and apply to Job Number #1400917.

Veterinarian
Iowa State University, Ames, IA

The Laboratory for Animal Resources (LAR) Veterinary Services Unit at Iowa State University is currently accepting applications for a clinical veterinarian. This position will report to the LAR Veterinary Specialist. Responsibilities of this position include: providing veterinary care for teaching and research animals; training faculty and staff; reviewing proposed courses and research projects involving animals; performing experimental procedures; and oversight of projects in progress.

The successful candidate will have a thorough knowledge of animal welfare regulations and the ability to apply the regulations and explain them to faculty, staff and students; a strong clinical background and ability to apply principles and skills to a variety of species including livestock, poultry, and wildlife species; and be capable of designing appropriate housing and enrichment techniques for animals housed in a laboratory setting, including livestock, poultry, and wildlife species. The successful candidate will also possess excellent oral and written communications skills and be able to work well with a diverse group of individuals.

To apply please go to Vacancy# 140151 https://www.iastatejobs.com/applicants/jsp/shared/position/JobDetails_css.jsp?postingId=452371 or to: www.iastatejobs.com/applicants/Central?quickFind=85102
In Memoriam

Joseph M. Fell
DVM, ACLAM Diplomate 58

Dr. Fell (MSU ’47), 93, Saint Augustine, Fla., died Aug. 22, 2013. A Diplomate of the American College of Laboratory Animal Medicine, he owned Animal and Bird Hospital in Morristown, N.J., from 1960 until retirement in 1980. During that time, Dr. Fell also served as a consultant in laboratory animal medicine. Early in his career, he was director of the Gaines Dog Food Research Kennels, served as assistant medical director for E.R. Squibb, managed veterinary sales and marketing at Pfizer Inc., and conducted clinical research at Warner Chilcott. Dr. Fell was a past president of what is now known as the American Association of Corporate and Public Practice Veterinarians and served on the executive committee of the American Veterinary Exhibitors Association. He was also a past president of the New Jersey and Metropolitan New Jersey VMAs and a member of the American Animal Hospital Association. In 1980, the MNJVMA named Dr. Fell Veterinarian of the Year. He is survived by his wife, Betty; two sons and a daughter; eight grandchildren; and 11 great-grandchildren.

To ensure that your personal and contact information with ACLAM remains current, don’t forget to update your personal information via the Personal Info Update Form on the ACLAM website at http://www.aclam.org/form_personal_infoQuask.HTML
Larry Butterfield, 73, passed away on August 3th, 2013 and is survived by Ann Butterfield, his beloved wife of 50 years.

Larry and Ann have one daughter, two sons, and two daughter-in-laws whom he blessed beyond measure: Cal & Vicki Butterfield, Kathryn Calahan, and Todd & Amy Butterfield. They have eight grandchildren. His family also includes four siblings who survive him: Jay Butterfield, Anne Pettine, Sue Hagberg, and Gene Butterfield.

Larry received his DVM from CSU and his post doctorate in laboratory animal medicine from Tulane. In his earlier and later practice years as a veterinarian, Larry worked for the pharmaceutical industry running lab animal operations. Larry and Ann raised their kids in Fort Collins, where he practiced at his South Mesa Veterinary Hospital from 1971-1989.

Larry enjoyed the company and conversation of friends and family. He was a true westerner who loved the blessings of liberty and embraced personal responsibility. Larry believed that one of life's greatest joys is to love what you do for your work. His children always saw his great love for their mom.

The family is celebrating his life together with one another, and wishes to thank everyone for their thoughts and prayers.
In Memoriam

Roger E. Wilsnack
DVM, ACLAM Diplomate 69

Dr. Wilsnack (MIN ’58), 81, Raleigh, N.C., died Jan. 8, 2014. A Diplomate of the American College of Laboratory Animal Medicine, he was director of Becton Dickinson Research Center in Research Triangle Park, N.C., prior to retirement in 1996. Following graduation, Dr. Wilsnack served two years with the United States Public Health Service. He then became a partner in a large animal practice in Plymouth, Wis. Dr. Wilsnack later switched to a career in industrial veterinary medicine, beginning as a microbiologist at Baltimore Biological Laboratories in Baltimore. He moved on to Huntingdon Research Center, a division of Becton Dickinson. Dr. Wilsnack guided the consolidation of Becton Dickinson’s research and development operations to North Carolina, where he served as director.

His wife, Julie; two sons; 13 grandchildren; and six great-grandchildren survive him. One son, Dr. Eric Wilsnack (VMR ’84), is a small animal veterinarian in Sebastian, Fla. Memorials may be made to Alzheimer’s Foundation of America, 322 Eighth Ave., 7th Floor, New York, NY 10001.
Sunday May 4, 2014

8:00am-3:30pm   ACLA BOD Meeting –
1:00pm-5:00pm   Registration – Ballroom
                 Foyer
1:30pm-4:30pm   Committee Meeting-TBD
2:00pm-4:00pm   Committee Meeting-TBD
3:00pm-5:00pm   Foundation Grant Proposal
                 Review-TBD
3:00pm-5:00pm   Committee Meeting- TBD
1:00pm-5:00pm   Poster Set up-TBD
4:00pm-5:30pm   ACLA Business Meeting-TBD
6:00pm-6:30pm   Load onto Boats for a short trip to the Hagedon Center
6:30pm-9:30pm   Opening Reception & Dinner-Return by boat to the Hotel

Monday May 5, 2014

7:00-8:30am   Breakfast –TBD
Morning: Ballroom- TBD
8:00-8:15am   Introduction-
The One Health Initiative: One World, One Medicine, One Health
Christina Winnicker

The One Health Initiative is a movement to forge co-equal, all inclusive collaborations between physicians, osteopaths, veterinarians, dentists, nurses, and other scientific-health and environmentally related disciplines. ACLA has been asked to support and join this effort. As veterinarians, particularly those of us that cross animal and human health boundaries, we are relied upon for important contributions in science, research, and the development of treatment for disease. This session will feature the CEO of the One Health Commission on the initiative and what our role can be in global environmental, human and animal health. The Deputy Administrator of the One Health Commission will share the USDA perspective on the initiative, both how they’re responding to it and what they see as the research challenges for the future. A CDC scientist will discuss human and animal health worldwide, zoonoses, and emerging infectious diseases; and a research scientist will share his success in a comparative approach to cancer treatment, illustrating the One Health initiative in action.

8:15-9:00am   - History & Mission of the One Health Initiative
Cheryl Stroud, DVM,PhD
Executive Director
One Health Commission

9:00-9:45am   - USDA perspective on One Health: how they’re responding, focus areas & research challenges for the future,
Tracey Lynn, DVM, MS, DACVPM
One Health Coordination Office
USDA:APHIS:Veterinary Services

Break- 9:45-10:00am

10:00 -10:45am - Emerging Diseases
Darin Carroll, MS, PhD
Unit Lead: Disease Ecology/Laboratory Animal Studies
Centers for Disease Control & Prevention
Division of High Consequence Pathogens & Pathology
Emerging Pandemic Threats Program

10:45-11:15am - One Health initiatives at the veterinary schools
Ted Mashima, DVM, DACZM, DACVPM
Association Executive Director for Academic and Research Affairs
Association of American Veterinary Medical Colleges

11:15-Noon - A comparative approach to cancer treatment: One Health in Action
Chand Khanna, DVM, PhD, DACVIM, Director
Comparative Oncology Program, Center for Cancer Research
National Cancer Institute, National Institutes of Health
Increasing your marketability & expanding your management skill set

As a laboratory animal veterinarian in tight economic times, how can you be the most competitive? Could you benefit from skills or certification beyond your DVM? Why are some institutions hiring directors that aren’t vets? Many businesses have realized that the ability to measure and improve quality is an opportunity to cut costs. Do you know what you’re doing when it comes to strategic planning, project management and resource management? This session will discuss planning and management from the perspective of an Exec Ed trained Lean Management Practitioner, a Project Manager, and a Change Management Expert. The skills associated with each will be presented in the context of how a laboratory animal veterinarian could use those skills. Discussions will focus on practical application of the skills of each expert, including applied examples to help illustrate the point. The breakout session will be open, frank discussions with ACLAM Diplomates with business degrees/management certifications.

1:00-1:45pm - My self-exploratory experience in management & leadership development & how I came to the Exec Ed program,
Donna Jarrell, DVM, DACLAM
Director, Center for Comparative Medicine
Massachusetts General Hospital

1:45-2:30pm - Project Management
Chris Cosgrove, BS, CEO
ElmCos Group

2:30-3:15pm - Change Management
Edward O’Neil, PhD, MPA, FAAN
O’Neil & Associates

3:15-3:30pm - BREAK

3:30-5:30pm - Breakout Session-Three separate rooms

6:30-7:30pm - Reception-TBD

7:30-10:00pm - Awards Dinner- TBD

Tuesday May 6, 2014

6:45-8:00am - Training Program Directors Breakfast-TBD

7:00-8:00am - Breakfast, Location TBD

Disaster Planning: for the internal disaster & from an expert perspective

We all wrote a disaster plan, but do you know what kinds of disasters really happen? This session will open with an AAALAC report of what kind of disasters really happen the most frequently, and experts in engineering & physical plant/design discussing how to prevent the ‘internal’ disaster: much more common than floods or hurricanes. An expert from a federal disaster response team will discuss how the pros approach disaster planning & response. The session will conclude with a panel Q&A with all the speakers.

8:00-8:45am - Introduction from AAALAC: where disasters actually happen
John Bradfield, DVM, PhD, DACLAM

8:45-9:30am - Preventing the Internal Disaster by Design
Jerry Percifield, AIA
Project Principal HDR Architecture

Break-9:30-9:45am

9:45-10:30am - How the pros handle disasters & what you need to know
Cheryl Eia, JD, DVM, MPH
Coordinator of Emergency Preparedness & Response,
American Veterinary Medical Association

10:30-11:15am - Designing to prevent a disasters: mechanical system failures & physical plant design
William Zavatkay, PE, LEED AP BD+C
Director of Mechanical Engineering, Atlanta
11:15-12:15pm - Panel Discussion with all the above speakers on panel

12:15-1:15pm - Lunch- Location TBD

1:15-5:00pm - US Army Educational Program - To be added

Afternoon: Free Time for Leisure Activities- Available later

6:00-6:30pm - Reception  Board Boats for Dinner Cruise

7:30-10:00pm - Dinner- -on Boats on Coeur d’Alene Lake

**Wednesday May 7, 2014**

7:00am-8:00am - Breakfast- TBD

**Special Topic Lecture: Update on Pain Management**
Jennifer Lofgren, DVM, MS, DACLAM
Clinical Assistant Professor Laboratory Animal Medicine
University of Michigan Medical School

**Scientific Sessions:**
Wonder where your money is going? 2013’s ACLAM Foundation Grant Awardees will come present their research to the college. In addition, we will have a special one hour session on current pain management strategies in laboratory animal species.

8:05-8:50am - Pharmacokinetic analysis of three buprenorphine drug delivery systems: injectable, sustained release & transdermal
   Paula Ezell

8:50-9:35am - Use of a rotational enrichment strategy to enhance the well-being of rats in the laboratory
   Debra Hickman

9:35-10:00am - Break

10:00-10:45am - Effect of room ventilation rates on air quality and intracage environment in animal facility rooms with individually ventilated cage systems
   Claire Lindsell

10:45-11:15am - Diagnosis of active fur mite infestation by quantitative PCR & RT-PCR
   Alexander Sheh

11:15-12noon - Developing a standardized reference diet for zebrafish (Danio rerio)
   Stephen Watts

12noon-12:45pm - Effective therapy for Monkey B virus exposure
   R. Eberle

**Forum Concludes**
Sunday May 4
8:00am - 4:00pm  ACLAM BOD Meeting –TBA
1:00pm-  5:00pm  Registration –TBA
3:00pm-5:00pm  Foundation Grant Proposal Review–TBA
1:00pm-5:00pm  Poster Set up
4:30pm - 6:00pm  Business Meeting –TBA
6:30pm -  9:30pm  Opening Reception & Dinner-TBA

Monday May 5
7:00am-8:30am  Breakfast-TBA
9:00am to 4:00pm  Silver Valley Tour with Robert Singletary

We head east through the beautiful Coeur d'Alene Mountains on our way to town of Wallace, the center of the silver mining district, we make a brief stop at the Old Mission, built by Jesuit Priest and the Coeur d'Alene Tribe in 1853. Constructed with a Greek/Doric style, this is the oldest standing building in the state of Idaho.

Lunch will be on your own and you will have a chance to do some shopping.

While in Wallace, we will take a walking tour of the historic downtown including the Northern Pacific Railroad Museum, the Mining Museum and the Bordello Museum. There will also be the opportunity to tour one of the mines.

6:30pm - 7:30pm  Pre-dinner Reception- TBA
7:30 pm-10:00 pm  Dinner and Awards Ceremony
Grand Ballroom

Tuesday May 6
7:00 am-9:00am  Breakfast- TBA
9:00am- 12:00 Noon with Robert Singletary

A visit to the Farragut Naval Training Station Museum. The Farragut Training center was one of the largest Naval Training Centers in the U.S. It was built in 1943 on the southern tip of Lake Pend Oreille.

11:30am-1:00 pm  Lunch at Hotel followed by optional Forum leisure activities
1:30 pm-5:00pm  Leisure activities
6:30pm-7:30pm  Reception –TBA
7:30pm-10:00pm  Dinner, silent Auction and Posters-TBA

Wednesday May 7
7:00 am-9:00am  Breakfast-TBA
9:30 am –11:30am  History of the area around Downtown Coeur d'Alene: Visit historic stores, homes and churches walking tour.
11:30 am –Noon  Informal discussions on 2015 ACLAM Forum- New Orleans, LA

Forum for Life Working Committee
Mel and Judy Balk
Pierre and Beverly Conti
Sue VandeWoude- BOD Liaison

Robert Singletary is a successful educator for over forty years, and known locally as North Idaho’s Renaissance Man. In addition to teaching a variety of courses in the area of history, arts, and humanities, Robert is also a symphony conductor, author, historian, and living history performer. As a musician he has performed with several musical organizations in the region, including the Spokane Symphony. Over the years, he has taught at various educational levels from pre-school to college. Most of his educational career was in higher education, teaching many years for North Idaho College and Lewis-Clark State College in Coeur d’ Alene.

Whatever the educational situation or subject, be it a piano or violin lesson, conducting a concert, giving a tour, or teaching an art history class, one of Robert’s main objectives is making connections to our cultural heritage. He firmly believes that understanding our past, whether it is personal, family, community, or country, gives us a better understanding of the present, and some insight to the future.

After retiring from North Idaho College in 2007, Robert has traveled, worked in his garden, played a few concerts, and presented a series of lectures for the Coeur d’ Alene Public Library. He soon realized that full retirement was not in the picture for him. About a year ago, he began to develop the idea of creating an organization that would encompass many of his passions, talents, and interests. Robert is not starting a new career, but bringing together years of teaching and organizational experiences to create his own institution, Heritage Unlimited.
2014 ACLAM Forum Golf Tournament
To Benefit the Research Efforts of the ACLAM Foundation

General Information
The 2014 ACLAM Foundation Golf Event will be held at the Coeur d’Alene Golf Course a 10 minute boat ride from the hotel on Tuesday, May 6, 2014 beginning at 12:20 pm. So begin work on your golf game and join us for fun!

Format
Because of the allure of the golf course the golf pro-shop recommends players play their own ball. However, if players are interested they may play as pairs or in a 4-some scramble. If playing a scramble the following rules should be used:

• Best Ball (Captain’s choice). Each Player hits a tee shot, the team selects the best position; all players hit the second shot from that position (or if a team of 2 both players hit from that location). This routine is repeated until the hole is complete.

6 tee times have been pre-reserved. We will not be able to get any additional tee times so if you want to play please sign up early. The first 24 players will be signed up.

Tuesday evening we have dinner on the lake, boats will leave the dock between 6 and 6:30 so we hope for a prompt completion of the round and being able to make the dinner reservations.

Cost
The tournament registration fee is $150 per person. Golf club rentals are available for $60 per person. Please note on the registration form if you need to rent clubs. Meeting registration information can be obtained by visiting the ACLAM web site at www.aclam.org.

Fishing in Idaho
A guided fishing trip before the ACLAM Forum on May 2nd or 3rd is being planned. If you are interested in joining please contact Jon Reuter at reuter@salk.edu.

2014 ACLAM The Pacific Northwest Wine and Cheese Tour
To Benefit the Research Efforts of the ACLAM Foundation

General Information
Beverly’s at the Coeur d’Alene Resort proudly offers one of the finest wine cellars in North America. Valued at more than 2 million dollars, recognized by DiRona, the Wine Spectator and other national and international wine groups, we have built and maintain a modern example of a classic wine cellar. We currently offer more than 1700 wines from 9 countries, more than 90 regions, with a “passive” cellar of wines to be released for sale as they are ready, more than 20,000 bottles in all. The Coeur d’Alene Resort as a destination maintains the largest cellar in the Pacific Northwest supported by a wide audience of wine lovers from across North America. “The Pacific Northwest Wine Tour” will feature our boldest and best local wines from both Washington, Oregon and Idaho and guarantees education on flavors not found around most of the country. You will also sample some of the finest cheese that complement extremely well with these wines. Solemner Eric Cook has spent the last 19 years of his career in one version of the wine trade or another. Beginning with private Clubs and apprentice wine service at fine dining restaurants here in the Northwest, he veered off to spend a couple years working for a local winery and selling for a fine wine distributor as a route salesman calling on restaurants and retail shops. These experiences rounded his experience enough to create a wine teaching position with Spokane’s Community Colleges, which he maintains on an adjunct status even today. With teaching, Eric began work in the late 1990’s for a local wine shop where he became well-known for orchestrating tasting events and weekly classes for the public; it was during this time he passed the first of his exams for the Court of Master Sommeliers. But all the glamour of dusting shelves couldn’t keep him from his original passion of connecting people with great tastes in restaurants, and in 2005 the Coeur d’Alene Resort was fortunate to attain his services.

Cost
$60 per person for 3 whites and 3 reds, with cheese pairing (a portion of the proceeds go to the ACLAM Foundation)
2014 ACLAM Gear!
All proceeds benefit the ACLAM Foundation

ACLAM Gear Order Form

Name: ____________________________
Address: __________________________
City: ____________________________ State: ______ Zip: ______
Phone Number: ____________________________
Email address: ____________________________

Fleece are $49.00 each plus $10.00 shipping and handling (or 2 for $15.00). Note that you may pick up your fleece at the Forum in Coeur d’Alene Idaho May 4-7 at no additional charge (or have a friend pick it up for you).

If you are having a fleece shipped to you, please pre-pay by check. If you are attending Forum, you may either pre-pay by check or pay at Forum with a check or credit card.

Are you attending Forum? □ Yes □ No
Will a friend be picking up your fleece(s)? If Yes, please list their name: ____________________________

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Total Number of fleece: 

X $49.00 EACH
+ $10.00 shipping and handling
(2 for $15.00) if not picking up at Forum

Total due: ____________________________

Orders will be accepted until March 31st ONLY!

Please mail checks (made payable to ACLAM Foundation) and order forms to: Chris Boehm
2120 Kessler Blvd E Dr.
Indianapolis, IN 46220

Or email completed forms to: boehmc@iupui.edu
ACLAM FORUM REGISTRATION
May 4-7, 2014
Coeur d’Alene Resort
Coeur d’Alene, Idaho
“Management, Disaster Planning and Science”

Name(s) _______________________________________
Address _______________________________________
___________________________________________
FAX______________ Email____________________

ACLAM DIPLOMATE EARLY $625 __________
ACLAM DIPLOMATE LATE $650 __________
NON-DIPLOMATE $650 __________
Forum for Life or Spouse $299 __________
TOTAL __________

METHOD OF PAYMENT

PLEASE REGISTER ON LINE IN THE MEMBERS ONLY SECTION, IF POSSIBLE

___Check  ____Visa  ____MasterCard  ____AMEX

__________________________________________
Card Number

HOTEL INFORMATION

The Coeur d’Alene
115 S. 2nd Street
Coeur d’Alene, ID 83814
Ph: 800-688-5253