

35TH ANNUAL CONVENTION
PROCEEDINGS
American Association of Bovine Practitioners



Madison, Wisconsin
September 26-28, 2002

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1 Data on file, IMMVAC, Inc.

2 Veterinary Immunology Tizard, W.B. Saunders, Phil., 1987

3 Med. Immunology, Barrett, F.A. Davis, Phil., 1991.

4 Musser, J., Anderson, K., Effect of vaccination with an Escherichia coli bacterin-toxoid on milk production in dairy cattle. JAVMA, Vol. 209, No. 7, October 1, 1996.

5 Scott, H., Ireland, M., Sargeat, J., Lissimore, K., Leslie, K., Keeton, D., Mallard, B., Effects of a gram negative core antigen vaccine on physiologic and production parameters in late lactation and dry period holstein dairy cows., Department of Veterinary Microbiology and Immunology, University of Guelph, Guelph, Ontario, Canada N1G2W1.

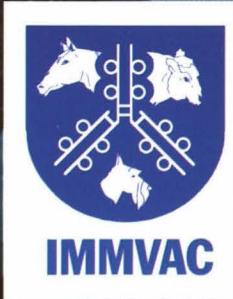
6 Miller, R., Sprouse, R., Garner, H., Active Immunization of Cows with a *Salmonella typhimurium* Mutant Bacterin-Toxoid and the Passive Transfer of Anti-core Antigen Antibodies in Colostrum., 16th World Buiatrics Congress, August 13-17, 1990, Salvador-Bahai-Brazil.

7 Worthington, T., The Rationale of Mass Treatment of Gram-Negative Scours in Large Calf Ranches., American Association of Bovine Practitioners, 29th Annual Conference: September 12-14, 1996; San Diego, CA.

8 Calabotta, D., Worthington, T., Gram-Negative Bacterial Protection in Beef and Dairy Production Systems: New Vaccine Technology Provides Cross-Protection with Immune Stimulation., California Dairy Herd Improvement, Vol. 6, No. 7, September 1997.

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of the
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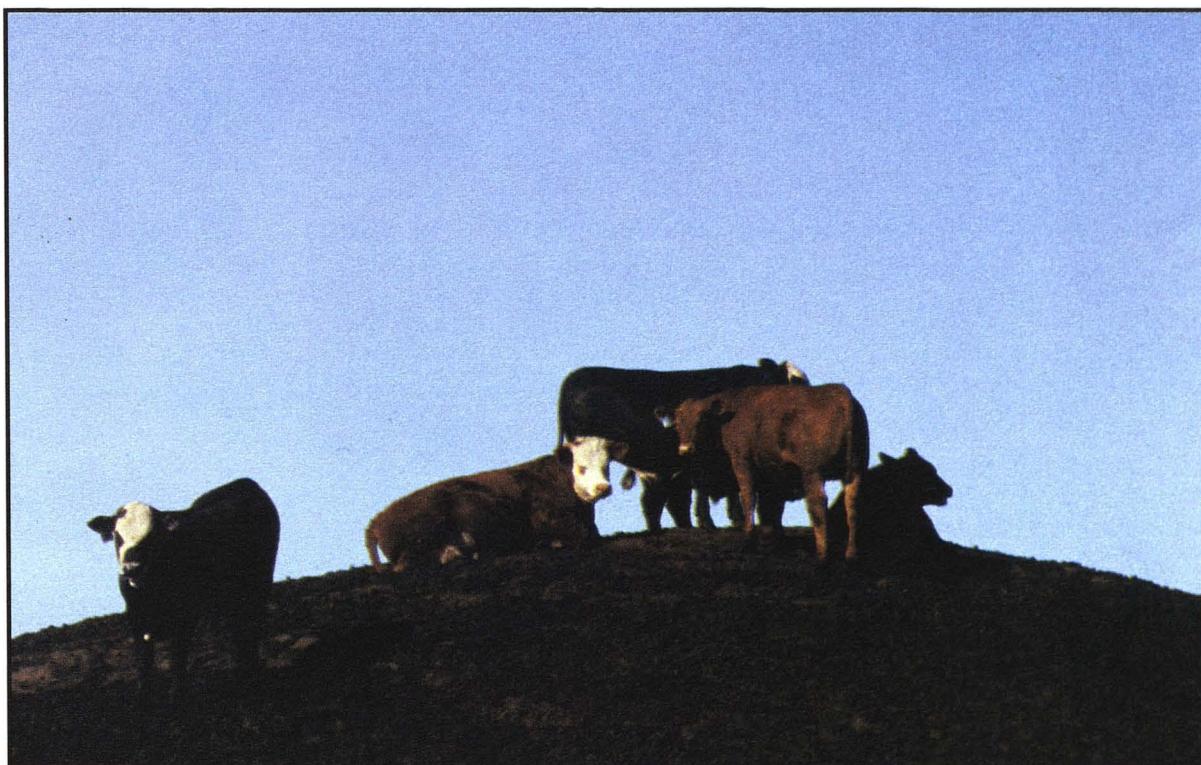


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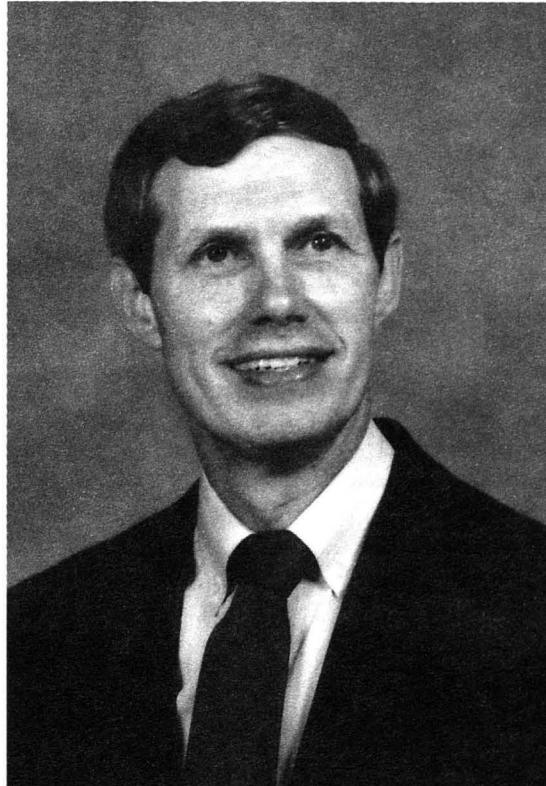
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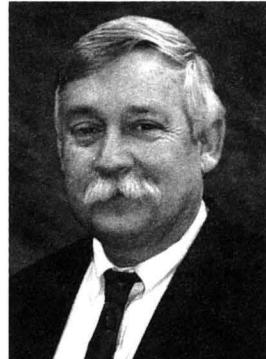
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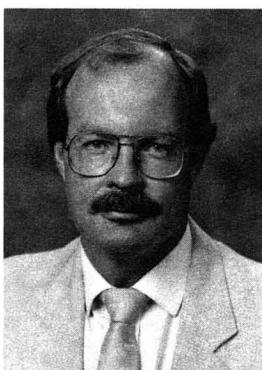
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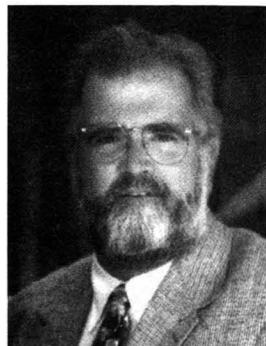
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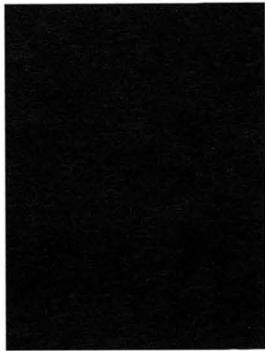
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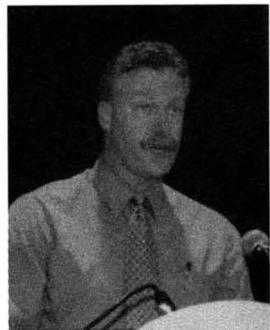
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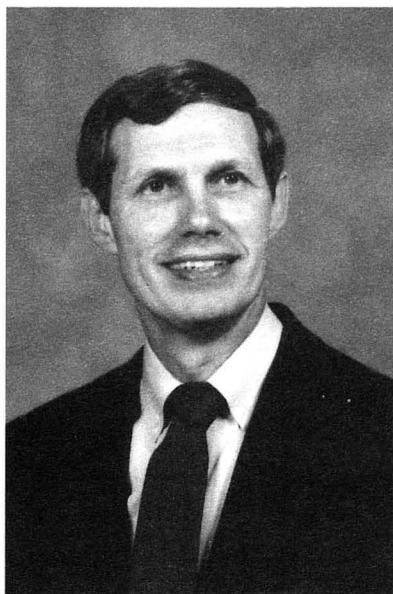


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A Message From The President



Each AABP presidency is defined by the events of the current year. Certainly the past year has had numerous defining events. The world trade center attack and its effect on the Vancouver meeting, anthrax spores and the economy are all defining events.

Those events are history now and the officers and members of the AABP must look ahead and plan for the future and not dwell on the past. When I was in veterinary school a faculty member had a picture in his office of some harness horses in the stretch run. The driver of the lead horse was looking over his shoulder at the horses behind him. The caption read, "never look back, the whole race is ahead of you". From that picture I developed one of my many philosophies for life "learn from the past, live in the present, plan for the future".

As I look to the future of the AABP there is much work to be done. The food animal veterinary industry is in the midst of some major changes, some good and some not so good. The future role of the cattle veterinarian will include more information management. We will work with other professionals as a team. We will define our niche within the industry as the food animal health expert. We must be problem solvers, educators, advisors and mentors. We will be held accountable for the safety of the meat, milk and milk products of the world. Our honesty and ethics must be above reproach.

The future role of the AABP will be to provide continuing education to all of its members to meet the needs of cattle veterinarians around the world. The AABP must be proactive in the recruitment of people into the field of veterinary medicine and more specifically those interested in cattle. We must take an active role in shaping our future by acting as advisors and a source of information to government agencies and constituency groups around the world. The information we supply must be based in science and not cater to a few well intended but misguided people.

Best regards

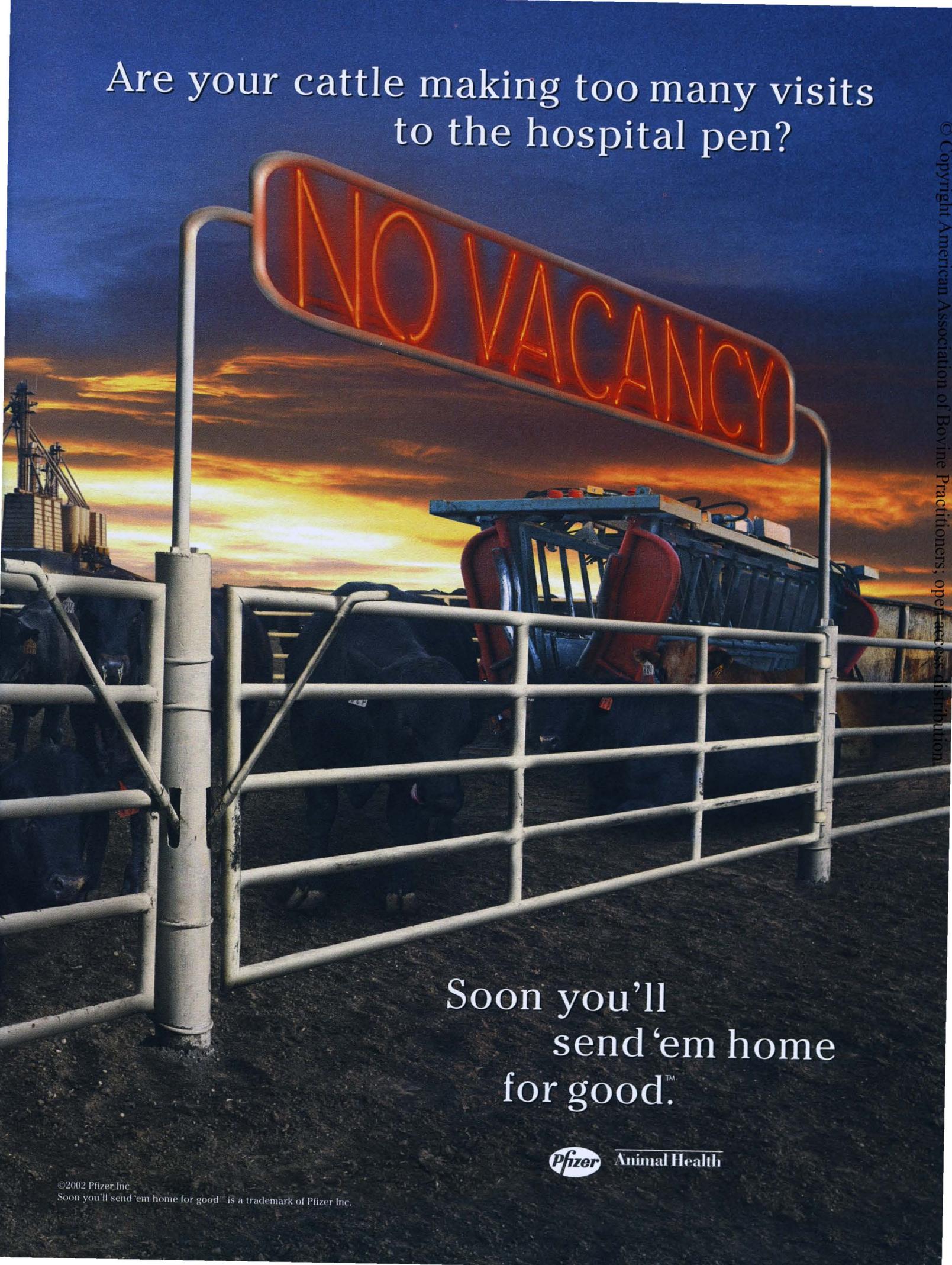
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Are your cattle making too many visits
to the hospital pen?

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A photograph of a cattle pen at sunset. In the foreground, a metal cattle guard is visible. A large, illuminated neon sign reading "NO VACANCY" is mounted above the gate. In the background, several cattle are visible in the pen, and a large industrial building or feed mill is visible under a dramatic, orange and yellow sunset sky.

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