

## **CURRICULUM VITAE**

January 2009

**Kenneth (Bill) Yates, D.V.M., M.S.**

### **BUSINESS ADDRESS**

Harding University  
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### **CURRENT POSITION**

December 2006 – Present      Professor and Chair  
Department of Pharmaceutical Sciences  
Harding University College of Pharmacy

### **EDUCATION**

1974 - 1977	<b>DVM</b> Texas A&M University, College Station, TX
1973 - 1975	<b>MS</b> Texas A&M University, College Station, TX
1970-1973	<b>BS</b> Texas A&M University, College Station, TX
1969	Abilene Christian University, Abilene, TX

### **PROFESSIONAL EXPERIENCE**

2006-      Professor and chair department of pharmaceutical sciences where responsibilities include teaching, department management including faculty recruitment and development, academic and research policy development, and strategic planning for technology transfer as well as research facilities support and development. Current advisor for emerging life science and biotechnology companies related to business strategy, operational support, technology assessment and product development. Also, currently serves as a Director for Piedmont Pharmaceuticals, Inc.

**PROFESSIONAL EXPERIENCE** (cont'd)

2002-2006 Founder and president of DelSite Biotechnologies, Inc., a wholly owned subsidiary of Carrington Laboratories, Inc., Irving, Texas. Responsibilities included establishing facilities, recruiting employees, advisors and consultants, and management of all operations including business development, research and development, legal and regulatory affairs. Additional responsibilities included intellectual property strategy and management as well as development and implementation of strategies for non-dilutive capital acquisition. This was accomplished through obtaining both SBIR and NIAID grants totaling ~\$7M. The grant funding and execution of the related development program enabled DelSite to bid for a \$152M DHHS contract.

Business development efforts have led to several academic and corporate collaborations, one of which related to an agreement for the development of a proprietary peptide drug for Alzheimer's disease.

Research and development activities included feasibility studies on delivery of several vaccines and peptides, and development activities directed toward both intranasal and injectable vaccines for avian influenza strain H5N1. R&D activities also included development of scale manufacturing for the company's new polymer delivery technology, successful completion of a Phase I trial and filing of a Drug Master File.

1999-2002 Vice President, Research and Development, Carrington Laboratories. Responsibilities included management and oversight of Research and Development operations, including clinical trials, and regulatory affairs for drugs and devices. Product development activities included taking a drug product through Phase III clinical trials, completion of clinical studies and device registration for an oral wound dressing for management of post extraction wounds, and clinical studies for device registration of an oral rinse for management of pain associated with mucositis.

1998-1999 Executive Director, Research and Development, Carrington Laboratories. Responsibilities included management and oversight of day-to-day operations of Research and Development including preclinical development and discovery activities for the Company.

1997-1998 Executive Director, Preclinical Research and Development, Carrington Laboratories. Responsibilities include new drug development from discovery through preclinical development.

**PROFESSIONAL EXPERIENCE** (cont'd)

- 1995-1997 Senior Director of Preclinical and Basic Research, Carrington Laboratories. Responsibilities included management of basic sciences, preclinical pharmacology and toxicology programs, and formulation development for new drugs and devices. Responsible for initial phases of product development up to technology transfer which involved both marketing and manufacturing interactions. Thirteen new device and OTC wound and oral care products transferred to manufacturing for scale-up in 1996. Interacted with business development for licensing new products.
- 1994-1995 Director of Preclinical/Veterinary Studies and Product Development Coordinator, Carrington Laboratories. Primary responsibility for coordinating the pharmacology and toxicology programs in support of Carrington's licensed prescription veterinary product, Acemannan Immunostimulant.
- 1993-1994 Director of Animal Studies, Carrington Laboratories. Primary responsibility was associated with GLP toxicology study support including protocol development, contract negotiation and study monitoring. Secondary responsibility was to direct the clinical veterinary program for the development of Acemannan Immunostimulant.
- 1990-1993 Associate Director of Veterinary Studies, Carrington Laboratories. Primary responsibility for the clinical development and approval of Acemannan Immunostimulant as adjunct therapy to surgery for the treatment of fibrosarcoma of dogs and cats as well as an adjuvant for use in veterinary vaccines.
- 1977-1988 Small Animal Private Practice and Veterinary Clinical Research

**ACADEMIC APPOINTMENTS**

- 1993 **Adjunct Assistant Professor**  
University of Texas Southwestern Medical School
- 1995 – 1997 **Member PhD Graduate Committees (two candidates)-**  
Candidates research related to isolation, identification and characterization of potential therapeutic compounds obtained from natural plant materials.  
University of Texas at Dallas, Department of Chemistry.
- Member PhD Graduate Committee-** Candidate research emphasis was related to methods and animal model development for wound healing research.  
Auburn University, Scott-Ritchie Research Center.

**TEACHING EXPERIENCE**

1993-1998	<b>Good Laboratory Practices</b>
1999-2001	<b>Good Manufacturing Practices</b>
Spring 2007	<b>Nasal Drug Delivery</b> Special Topics 444
Fall 2007	<b>Tuberculosis Pharmacotherapy</b> Clinical Pharmacology II PAS 622
Spring 2008	<b>Structure and Function of the Skin and Wound Healing</b> Clinical Medicine III PAS 646
Fall 2008	<b>Introduction to Pharmaceutical Sciences</b> Pharmaceutical Sciences PHAR 325
	<b>Tuberculosis Pharmacotherapy</b> Clinical Pharmacology II PAS 621
	<b>Immune System Modulators</b> Medical Immunology PHAR 322
	<b>Influenza: Past, Present and Future</b> Professional CE, APA
	<b>Influenza: The Impact on the Health of Our Community</b> Community Education

**PUBLICATIONS**

Yawei Ni, Debra Turner, **Kenneth Yates**, Ian Tizard, Stabilization of Growth Factors Relevant to Wound Healing by a Plant Cell Wall Biomaterial. *Planta Med*: DOI: 10.1055/s-2007-990225

Tai-Nin Chow J, Williamson DA, **Yates KM**, Goux WJ. Chemical characterization of the immunomodulating polysaccharide of Aloe vera L. *Carbohydrate Research*, 2005 May 2; 340 (6): 1131-42.

Talmadge J, Chavez J, Jacobs L, Munger C, Chinnah T, Chow JT, Williamson D, **Yates K**. Fractionation of Aloe vera L. inner gel, purification and molecular profiling of activity. *International Immunopharmacology*, 2004 December 20; 4 (14): 1757-73.

Ni Y , Turner D , **Yates KM** , Tizard I . Isolation and characterization of structural components of Aloe vera L. leaf pulp. Int Immunopharmacol. 2004 Dec 20;4(14):1745-55.

Ni Y, **Yates KM**, and Tizard IR. Aloe Polysaccharides; Aloes: The genus Aloes by Tom Renolds. CRC - TAYLOR & FRANCIS, 2004.

Egger SF, Brown GS, Kelsey LS, **Yates KM**, Rosenberg LJ, Talmadge JE. Hematopoietic augmentation by a  $\beta$ -(1,4)-linked mannan. Cancer Immunology and Immunotherapy, 1996, 43: 195-205

Egger SF, Brown GS, Kelsey LS, **Yates KM**, Rosenberg LJ, Talmadge JE. Studies on optimal dose and administration schedule of a hematopoietic stimulatory  $\beta$ -(1,4)-linked mannan. Int J Immunopharmacol. 1996 Feb;18(2):113-26.

King GK, **Yates KM**, Greenlee, PG, Pierce KR, Ford CR, McAnalley BH, Tizard, IR. The effect of Acemannan Immunostimulant in combination with surgery and radiation therapy on spontaneous canine and feline fibrosarcomas. J Am Anim Hosp Assoc. 1995 Sep-Oct;31(5):439-47.

**Yates KM**, Rosenberg LJ, Harris CK, Bronstad DC, King GK, Biehle GA, Walker B, Ford CR, Hall JE, Tizard IR. (1992) Pilot study of the effect of acemannan in cats infected with feline immunodeficiency virus. Vet. Immunol. Immunopathol. 35:177-189.

Harris C, Pierce K, King G, **Yates KM**, Hall J, Tizard I. Efficacy of acemannan in treatment of canine and feline spontaneous neoplasms. (1991) Mol. Biother. 3:207-213.

### **U.S. Patents**

Dried Hydrogel From Hydrophilic-Hygroscopic Polymer. U.S. Patent No. 5,409,703

Uses of Denture Adhesive Containing Aloe Extract. U.S. Patent No. 5,760,102

Bioactive Factors of Aloe Vera Plants. U.S. Patent No. 5,902,796

Aloe Pectins. U.S. Patent No. 5,929,051

Pectin Substance as a Growth Factor Stabilizer. U.S. Patent Nos. 6,274,548 and 6,313,103

In Situ Gel Formation of Pectin. U.S. Patent No. 6,777,000

Pharmacological Compositions Comprising Pectins having High Molecular Weights and Low degrees of Methoxylation. U.S. Patent No. 7,022,683

High Molecular Weight, Low Methoxyl Pectins, and their Production and Uses. U.S. Patent No. 7,462,702.

**Published Pending U.S. Patent Applications**

Dispersed Solid-Containing Complex Carbohydrate. U.S. Applications No. 20030175370 and 20050037096.

Combination of a Growth Factor and a Protease Enzyme. U.S. Application No. 20030147876.

**GRANTS**

Ni, Y, **Yates, K**, NIH Biodefense Small Business Innovative Research Grant; An in-situ gelling nasal vaccine delivery system. DelSite Biotechnologies, March 2004, ~\$900,000.00

Ni, Y, **Yates, K**, NIH/NIAID Biodefense Challenge Grant; An Inactivated Influenza Nasal Powder Vaccine, DelSite Biotechnologies, Received October 2004, ~\$6,100,000.00.

**NATIONAL and INTERNATIONAL PLATFORM PRESENTATIONS**

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|----------------|---|
| March 2006     | <b>A novel inactivated nasal influenza vaccine</b><br>Presented at the 2006 World Vaccine Congress, Washington, D.C.  |
| May 2004       | <b>An in-situ gelling inactivated influenza nasal powder vaccine</b><br>Ni Y, Tian L, Turner D, Yates KM, and Tizard I.<br>Influenza Vaccines for the World Conference (IVW), Lisbon, Portugal.   |
| September 1993 | <b>In vitro and in vivo immunological effects of acemannan, a polydispersed b-(1,4)-linked acetylated mannan</b><br>Kemp MC, Marshall GD, Chinnah AD, <b>Yates KM</b> , Rosenberg LJ, Tizard IR, McAnalley BH<br>Immunopotentiators in Modern Vaccines Conference. Pasteur Institute, Paris, France                               |
| September 1991 | <b>Effect of acemannan in treatment of feline immunodeficiency virus-infected cats</b><br><br>Carpenter RH, Harris CK, Bronstad DC, King G, Biehle GA, Walker BW, <b>Yates KM</b> , Tizard IR<br>First International Conference of Feline Immunodeficiency Virus Researchers. University of California, Davis, California Meeting |

## POSTER PRESENTATIONS

Ni Y, Tian L, Medi BM, Guo J, Turner D, Villaneueva I, Arden N, Quarles J, Tizard I, **Yates K**. An inactivated influenza whole virion nasal powder vaccine using Gelvac™ Powder Delivery System. Presented in the Business Forum Innovation Corridor, 2006 BIO Annual International Convention, Chicago, Illinois.

Ni Y, Tian L, Turner D, Villanueva I, Medi BM, Guo J, Arden N, Quarles J, Tizard I, **Yates KM**. Induction of protective immunity against influenza virus with a nasal powder vaccine delivery system (GelVac™). Presented at the 45th ICAAC Meeting, December 19, 2005, Washington, D.C.

Williamson D, Ni Y, Boudreaux B, **Yates K**. An in situ gelation study of dry powder GelVac™ formulations containing GelSite® Polymer, a well-characterized naturally occurring complex carbohydrate. Presented at the AAPS Annual Meeting, November 2005, Nashville, TN.

**Yates KM**, Ni Y. GelVac™ nasal powder: a new approach to vaccine delivery. Presented at BIO 2005 Annual International Convention, June 2005, Philadelphia, PA.

Stroud PA, Perry ES, Ni Y, **Yates KM**. Mucoadhesive property of the GelSite® polymer and the GelVac™ nasal vaccine delivery system. Presented at the 32<sup>nd</sup> Annual Meeting and Exposition of the Controlled Release Society, June 2005, Miami, FL.

Williamson D, Parker W, **Yates K**. Method validation of two critical release specifications for GelSite® polymer, an in-situ gel delivering vehicle. Presented at the AAPS National Biotechnology Meeting, June 2005, San Francisco, CA.

Ni Y, Tian L, Turner D, **Yates KM**, Tizard I. An in-situ gelling nasal powder vaccine delivery system (GelVac). Presented at the 31st Annual Meeting and Exposition of the Controlled Release Society, June 2004, Honolulu, HI.

Stroud PA, Ni Y, **Yates KM**. Rheological characterization of the GelSite™ polymer for protein/peptide delivery. Presented at the 31st Annual Meeting and Exposition of the Controlled Release Society, June 2004, Honolulu, HI.

Stroud PA, Carter C, Ni Y, **Yates KM**. Simultaneous quantitative detection of delivery vehicle and active protein agent by SEC-MALLS. Presented at the AAPS National Biotechnology Meeting, May 2004, Boston, MA.

Ni Y, **Yates KM**, Tizard I. Keratinocyte growth factor (KGF) and plasmin(ogen): a unique combination for enhanced wound healing. Presented at the AAPS National Biotechnology Meeting, May 2004, Boston, MA.

**Yates KM**, Kemp MC, Ni Y, Raboud J, Ford CR, Tizard IR. A comparison of the effects of acemannan (ACM) given by three routes of administration to feline immunodeficiency virus (FIV)-infected cats. Presented at IXth International Conference on AIDS/IVth STD World Congress, January 1993.

**Yates KM**, Raboud J, Tizard I. Pilot study of the effect of acemannan in cats infected with feline immunodeficiency virus. Presented at 2nd Annual Canadian National Conference on HIV/AIDS Research. September, 1993.

Rosenberg LJ and **Yates KM**. Improved feline peripheral blood mononuclear cell preparation for flow cytometry. Presented at First International Conference of Feline Immunodeficiency Virus Researchers. University of California, Davis, California, September 4-7, 1991.

**Yates KM**, Carpenter RH, Harris CK, Bronstad DC, Biehle GA, Walker BW, King GK. Use of acemannan in treatment of feline immunodeficiency virus disease. Presented at Veterinary Cancer Society 11th Annual Conference. Minneapolis, Minnesota, October 27-29, 1991.

### **TEACHING SEMINARS ATTENDED**

**Leadership, Team Building and Conflict Management:** AACP- Orlando, Florida, July 14, 2007

**AACP Annual Meeting:** Orlando, Florida, July 15-18, 2007

**AACP Institute:** Scottsdale, Arizona, June 2-5, 2008

**AACP Annual Meeting:** Chicago, Illinois, July 20-23, 2008

**AAPS Annual Meeting, Short Course on Pharmacogenomics:** Atlanta, Georgia, November 15-16, 2008

### **REVIEWER RESPONSIBILITIES**

1999 – 2005

*International Immunopharmacology*,  
Dr. James Talmadge, Editor in Chief

2008

Article Review: *Biotechnology and Applied Biochemistry*  
Dr. Stuart Hobday, Executive Editor

### **HONORS**

Various Who's Who both nationally and internationally

### **PROFESSIONAL ORGANIZATIONS**

American Association of Colleges of Pharmacy, member since 2007, Curriculum SIG

American Association of Pharmaceutical Scientist, member since 2002, Pharmaceutics and Drug Delivery Section

Association of University Technology Managers, member since 2007