

# XUNDE LI

## EDUCATION

**Ph.D.** (Parasitology), Department of Parasitology, Faculty of Medicine and Pharmacy, University of Rouen, Rouen, France, 2000

**M.S.** (Biology), Department of Biology, Changchun University of Agriculture and Animal Sciences, Changchun, China, 1990

**B.S.** (Animal science and nutrition), Department of Animal Sciences, Jilin Agricultural University, Changchun, China, 1987

## EMPLOYMENT AND POSITIONS

- **Research Scientist**, Western Institute for Food Safety and Security, University of California, Davis, California, 2008+
- **Assistant Project Scientist**, Department of Population Health and Reproduction, School of Veterinary Medicine, University of California, Davis, California, 2008+.
- **Staff Research Scientist**, Department of Population Health and Reproduction, School of Veterinary Medicine, University of California, Davis, California, 2003-2007.
- **Postdoctoral Researcher**, Laboratory of Epidemiology and Medical Ecology of Infectious Disease, School of Veterinary Medicine, University of California-Davis, Davis, California, 2001-2003
- **Postdoctoral Visiting Scientist**, Environmental Microbial and Food Safety Laboratory, Beltsville Agricultural Research Center, United State Department of Agriculture (USDA) , Beltsville, Maryland, 2000-2001
- **Instructor**, Department of Biology, Changchun University of Agriculture and Animal Sciences, Changchun, China, 1992-1997.
- **Assistant Instructor**, Department of Biology, Changchun University of Agriculture and Animal Sciences, Changchun, China, 1990-1992.

## ADDITIONAL TRAINING

- Qualitative and Quantitative Methods in Food Safety Risk Assessment, FDA and University of Maryland Joint Institute for Food Safety and Applied Nutrition, 2009

- Training of “Basic Supervisory”, Department of Human Resource, University of California-Davis, 2005
- Animal Care and Use Certificate, Office of Environmental Health & Safety, University of California-Davis, 2004
- Technical Writing Certificate, University of California-Davis & California State University-Fresno, 2004
- Training of Biological Use Authorization Protocol, University of California-Davis, 2003
- Training in Molecular Techniques, Laboratory of Molecular Parasitology, Department of Ecosystem, Pasteur Institute of Lille, France, 2000
- Hemo-Protozoology Certificate, Faculty of Medicine and Pharmacy, University of Rouen, France, 1998
- Training of Immunological and Cellular Techniques, Laboratory of Immunology and Immunopathology, CHU Hospital, University of Caen, France, 1998

## **RESEARCH INTERESTS**

- Application of HACCP, development of strategy, and assessment of risks for food safety and security.
- Development and validation of methods for detection and identification of foodborne and waterborne pathogens in a variety of foods and waters
- Food microbial safety emphasizing the molecular microbiology: pathogen fingerprinting and source tracking
- Evaluating of application of antibiotics for their impacts on safety of food, ecology of microbes, and health of animals and environment.
- Evaluating thermal effects and other sanitizers on survival and viability of microbial pathogens in foods and waters and development of strategies against pathogens contamination of foods

## **PROFESSIONAL MEMBERSHIPS**

- International Association for Food Protection
- American Society for Microbiology

## **PATENTS**

- Chengrui Xiao, Weili Wang, **Xunde Li**, Zhenguo Wang, Yang Cai. Immuno-Enrichment methods for detection of bacteria. Chinese patent No. ZL 2008 2 0071256.1 (2008)
- Chengrui Xiao, **Xunde Li**, Heping Liu, Yang Cai, Shiyu Yu. Immuno-Enrich filament method for detection of bacteria and Immuno-Enrich brush, application No. 200810050241.1.

## **EDITING**

- WHO-Chapter3: Zoonotic Waterborne Pathogen Loads in Livestock, 2009
- Member of Editorial Board of a book titled “Waterborne Pathogens in Agricultural Watersheds” (2<sup>nd</sup> edition). Natural Resources Conservation Service, United States Department of Agriculture, 2008~2009.
- Member of Editorial Board of a book titled A Modern English-Chinese Dictionary of Animal Sciences and Veterinary Medicine, 1994

## **JOURNAL REVIEWS**

- Journal of Food Science
- Journal of Food Safety
- Journal of Food Protection (USA)
- International Journal of Food Science and Technology
- Chinese Journal of Veterinary Medicine, manuscripts in English (China)

## **SERVICES**

- Member of Regents' Scholarship Administrative Advisory Committee, UC Davis, 2009+
- Member of Coaches, Commitment of Microbiology Field Exercise, Tulare County Office of Education, California, 2006.
- Secretary and faculty of organizing committee of the International Conference on Parasitic Zoonoses, Changchun, China, 1994.

## **PUBLICATIONS**

- C. Xiao, **X. Li**, W. Wang, R. Meng, Q. Meng, Z. Song, H. Liu, Y. Cai, Y. Luo, N. Wang, S. Wang. Development and application of an immuno-enrichment brush method for rapid detection of four species of pathogenic bacteria. Accepted by *Chin. J. Health Lab. Tech.* (#13811).
- X. Li**, E.R. Atwill, L.A. Dunbar, K. W. Tate. Effect of daily temperature fluctuation during the cool season on the infectivity of *Cryptosporidium parvum* Accepted by *Applied and Environmental Microbiology* (AEM02103-09 Version 2).
- X. Li**, R. Fayer, R. Palmer, J. Trout, C. Xiao. Strains of *Encephalitozoon cuniculi*, *Encephalitozoon intestinalis*, and *Encephalitozoon hellem* fail to experimentally infect food animals. *Chin J Vet Med.* in press.
- X. Li**, E.R. Atwill. Viability of *Cryptosporidium parvum* oocysts post excystation and heat treatment assessed by nucleic acid stain and mouse infectivity. *Chin J Vet Med*, 2009, Oct., 29 (10): 1274-1277.
- L. Li, **X. Li**, J. Yan. Alterations of concentrations of calcium and arachidonic acid and agglutinations of microfilaments in host cells during *Toxoplasma gondii* invasion. *Veterinary Parasitology*. 2008, Oct. (157): 21-33.
- X. Li**, R. Fayer. Infectivity of Microsporidian Spores Exposed to Temperature Extremes and Chemical Disinfectants. *The Journal of Eukaryotic Microbiology*. Nov. 2006, 53(S1): S77-79.
- Raccurt C.P., Brasseur P., Verdier R.I., **Li X.**, Eyma E., Pannier Stockman C., Agnamey P., Guyot K., Totet A., Liautaud B., Nevez G., Dei-Cas E., Pape J.W. Human cryptosporidiosis and *Cryptosporidium* spp. in Haiti (Cryptosporidiose humaine et espèces en cause en Haïti). *Tropical Medicine & International Health*. Jun. 2006, 11(6): 929-934.
- Li X**, Guyot K, Dei-Cas E, Mallard JP, Ballet JJ, Brasseur P. *Cryptosporidium* oocysts in mussels (*Mytilus edulis*) from Normandy (France). *International Journal of Food Microbiology*. 2006, May. 108(3):321-325.
- X. Li**, E.R. Atwill, L.A. Dunbar, T. Jones, J. Hook, K.W. Tate. Seasonal temperature fluctuations induce rapid inactivation of *Cryptosporidium parvum*. *Environmental Science & Technology*. 2005, Jun. 39(12): 4484-4489.

- Li X.**, Brasseur P., Agnamey P., Ballet J.J., Clemenceau C. Time and temperature effects on the viability and infectivity of *Cryptosporidium parvum* oocyst in chlorinated tap water. Archives of Environmental Health. 2004, Sep. 59(9): 462-466.
- E.R. Atwill, R. Phillips, M.D. Pereira, **X. Li**, B. McCowan. Seasonal Shedding of Multiple *Cryptosporidium* Genotypes in California Ground Squirrels (*Spermophilus beecheyi*). Applied and Environmental Microbiology. 2004, Nov. 70(11): 6748–6752.
- L. Hou, **X. Li**, L. Dunbar, R. Moeller, B. Palermo, and E. R. Atwill. Neonatal-Mouse Infectivity of intact *Cryptosporidium parvum* oocysts isolated after optimized in vitro excystation. Applied and Environmental Microbiology. 2004, Jan. 70(1): 642~646.
- X. Li**, K.W. Tate, L.A. Dunbar, B. Huang, E.R. Atwill. Efficiency for recovering *Encephalitozoon intestinalis* spores from waters by Centrifugation and Immunofluorescence Microscopy. The Journal of Eukaryotic Microbiology. 2003, 50: 579~580S
- R. Fayer, M. Santin, R. Palmer, **X. Li**. Detection of *Encephalitozoon hellem* in Feces of Experimentally Infected Chickens. The Journal of Eukaryotic Microbiology. 2003, 50: 574~575S.
- X. Li**, P. Brasseur, P. Agnamey, D. Leméteuil, L. Favennec, J.J. Ballet, J.F. Rossignol. Long-lasting anticryptosporidial activity of nitazoxanide in an immunosuppressed rat model. Folia Parasitologica. 2003, Mar. 50(1):19~22.
- Li, X.**, Palmer, R., Trout, J.M., and Fayer, R. Infectivity of microsporidia spores stored in water at environmental temperatures. The Journal of Parasitology. 2003, Feb. 89(1): 185~188.
- Li X.**, Brasseur P. Detection of *Cryptosporidium* oocysts from waters and viability assay. Chinese Journal of Applied and Environmental Biology. 2003, Feb. 9(1):32~35.
- X. Li**, J. M. Trout, M.C. Jenkins, R. Palmer, and R. Fayer. Effects of Gamma Radiation on Viability of *Encephalitozoon* Spores. The Journal of Parasitology. 2002, Aug. 88(4):812~813.
- Li, X.**, R. Fayer, J. Trout, M. Jenkins, and R. Palmer. Effects of gamma irradiation on the survival of *Encephalitozoon intestinalis* spores. The Journal of Eukaryotic Microbiology. 2001, 91S.

- A. Delaunay, G. Gargala, **X. Li**, L. Favennec, J.J. Ballet. Quantitative flow cytometric evaluation of maximal *Cryptosporidium parvum* oocyst infectivity in a neonate mouse model. *Applied and Environmental Microbiology*. 2000, Oct. 66(10): 4315~4317.
- G. Gargala, A. Delaunay, **X. Li**, P. Brasseur, L. Favennec, J.J. Ballet. Efficacy of nitazoxanide, tizoxanide and tizoxanide glucuronide against *Cryptosporidium parvum* development in sporozoite-infected HCT-8 enterocytic cells. *The Journal of Antimicrobial Chemotherapy*. 2000, Jul. 46(1):57~60.
- X. Li**, P. Brasseur. A NMRI suckling mouse model for the evaluation of infectivity of *Cryptosporidium parvum* oocysts. *Chinese Journal of Parasitology and Parasitic Disease*. 2000, Apr. 18(2): 94-96.

## REPORTS

- X. Li**, N. Watanabe, E.R. Atwill, T. Harter, B. Bergamaschi, R. Bond, G. Deng. Distribution of bacteria pathogens in Northern California dairies and associated ground water. Report to State Water Resource Control Board. pp 1-14, 2008
- Li X.**, Deng G., Chase J., Bond R., Atwill ER. Bacterial Pathogens in Dairy Ground Waters in the San Joaquin Valley. March, 2008
- McDougald, N.K., E.R. Atwill, K.W. Tate, **X. Li**, L. Hou, L. Dunbar, D. Dudley.  
Demonstration of rangeland vegetated buffers for reducing NPS pathogens, nutrients, and organic carbon into the tributaries of the Fresno and San Joaquin Rivers. CALFED and State Water Resource Control Board. 2008, June 4. pp 1-35.

## PRESENTATIONS

- X. Li**. Foodborne microbial pathogens and methods for detection. Meeting China's Chongqing Municipal FDA delegation, WIFSS, UC Davis, November 17, 2009.
- X. Li**, N. Watanabe, E.R. Atwill, C. Xiao, T. Harter. Detection and occurrence of *Salmonella* in dairy ground waters. Workshop of Theory and Practice of Points of Care Tests from Development through Manufacturing. San Francisco, November 9-11, 2009.
- X. Li**. Food safety and security. Institute of Electronics, Chinese Academy of Sciences, Beijing, China, October 12, 2009

- X. Li.** An overview of food microbial safety. Institute of Quality Standards & Testing Technology for Agro-Products, Chinese Academy of Agricultural Sciences, Beijing, China, October 12, 2009
- X. Li.** Food microbial safety in Western U.S. College of Food Science & Nutritional Engineering, China Agricultural University, Beijing, China, October 13, 2009
- X. Li.** Foodborne microbial pathogens and detection. Guangzhou Municipal Center for Disease Control and Prevention, Guangzhou, China, October 19, 2009.
- X. Li.** Pre-harvest food microbial safety and risk assessment. Department of Food Science and Technology, Heping Campus, Jilin University, Changchun, China, August 17, 2009.
- X. Li,** N. Watanabe, R. Atwill, and T. Harter. Detection and Occurrence of *Enterococcus* in Dairy Ground Waters. The Seventh ASM (American Society for Microbiology) Biodefense and Emerging Diseases Research Meeting, Baltimore, MD, 2009, February 22-25, 2009.
- X. Li,** and R. Atwill. Detection and occurrence of microbial pathogens from dairy ground waters in San Joaquin Valley. SWRCB/CALFED Bay-Delta Authority Drinking Water Program. Joint Project Advisory Committee Meeting-Drinking Water Quality Impacts from Nonpoint Sources. University of California Davis and U.S. Geological Survey. January, 12 2009.
- Li X.** Infectivity of *Cryptosporidium* oocysts from ground dwelling squirrels and impacts to human and animal health. Department of Animal Sciences, University of California Davis, November 17, 2008.
- X. Li,** N. Watanabe, E.R. Atwill, B. Bergamaschi, and T. Harter. Pathogen Source Characterization and Groundwater Occurrence in CAFOs. 2008 Joint Meeting of The Geological Society of America, Soil Science Society of America, American Society of Agronomy, Crop Science Society of America, Gulf Coast Association of Geological Societies. Houston, Texas. October 5-9, 2008
- X. Li,** *Cryptosporidium parvum*: Threats to public health and risk assessment. Department of Biological Sciences, College of Sciences, California State University, Pomona, April 6, 2006

- X. Li**, *Cryptosporidium parvum*: A pathogen of concern of food and water safety. College of Animal Science and Technology, Jilin Agricultural University. Changchun, June 30, 2006
- X. Li**, E. R. Atwill, L. Dunbar, K. W. Tate, B. Huang. Efficiency for recovering *Encephalitozoon intestinalis* spores from waters. VIII International Workshops on Opportunistic Protists (IWOP-8) & International Conferences on Anaerobic Protists (ICAP), Hilo, Hawaii, July 25~29, 2003.
- X. Li**, P. Brasseur, D. Lemeteil, P. Agnamey, L. Favennec, J.J. Ballet. Long-lasting anticryptodporidial activity of nitazoxanide in an immunosuppressed rat model. Congress "Infeetivologia 2000--Infectious Diseases past and Future", Casale Monferrato, Italy, May 15~19, 2000.

#### **PAPERS IN PROCEEDINGS OF MEETINGS**

- E. Vivas, R. Atwill, M. Jay-Russell, **X. Li**, T. Vodovoz, L. Benjamin, M. Partyka, R. Mandrell, M. Cooley. Sampling of wild rodents for foodborne pathogens along produce fields on the California central coast. Council of State and Territorial Epidemiologists, Portland, Oregon, June 6-10, 2010
- T. Harter, N. Watanabe, **X. Li**, E.R. Atwill, B. Bergamaschi. CAFOs as Source of Groundwater Pathogens and the Role of Indicator Organisms. 2009 EPA Symposium on Ground Waterborne Infectious Disease Epidemiology, Etiologic Agents, and Indicators. Washington, DC 20005-1910, December 1-3, 2009.
- Packman A.I., Harter T., Atwill E.R., **L. X.**, Lau B.L.T. Interactions of *Cryptosporidium parvum* oocysts with sediments and biofilms: Implications for waterborne disease transmission in agricultural watersheds. 2009 CSREES National Water Conference. St. Louis, Missouri. February 8-12, 2009.
- Atwill, E.R., N. Watanabe, **X. Li**, T. Harter, B. Bergamaschi. Pathogens in dairy farming: source characterization and groundwater impacts. Annual Fall Meeting of the American Geophysical Union. Abstract H33F-1702. San Francisco, CA. December 10-14, 2007.
- Phillips R, Atwill E, Dunbar L, Drake D, Jensen W, Lancaster D, Larson R, Lile D, Markegard G, **Li X**, McCowan B, Ward T. Environmental loading rates of waterborne pathogenic protozoa *Cryptosporidium parvum* in certain domestic and wildlife species in California.



- 58th Annual Meeting for the Society of Range Management, Fort Worth, TX, February 5-11, 2004.
- P. Brasseur, E. Eyma, **X. Li**, R. I. Verdier, P. Agnamey, B. Liautaud E. Dei-Cas. Circulation des oocystes de *Cryptosporidium* dans les eaux de surface et de distribution par adduction publique à Port-au-Prince, Haïti. Congrès de la Société Française de Parasitologie. 16-18 Décembre 2003, Maisons-Alfort, France.
- X. Li**, E. R. Atwill, L. Dunbar, J. Hook. Comparison of Nucleic Acid (SYTO-59) Stain to Neonatal Mouse Model for Evaluation of *Cryptosporidium parvum* Oocyst Viability. 78th Annual Meeting of the ASP (American Society of Parasitologists), August 1~5, 2003, Halifax, Nova Scotia, CANADA.
- X. Li\***, E. R. Atwill, L. Dunbar, K. W. Tate, B. Huang. Efficiency for recovering *Encephalitozoon intestinalis* spores from waters. VIII International Workshops on Opportunistic Protists (IWOP-8) & International Conferences on Anaerobic Protists (ICAP), July 25~29, 2003, Hilo, Hawaii, USA.
- R. Fayer, M. Santin, R. Palmer, **X. Li**. Detection of *Encephalitozoon hellem* in Feces of Experimentally Infected Chickens (IWOP-8) & International Conferences on Anaerobic Protists (ICAP), July 25~29, 2003, Hilo, Hawaii, USA.
- P. Brasseur, E. Eyma, **X. Li**, R.I. Verdier, P. Agnamey, B. Liautaud, E. Dei Cas, J.W Pape, C. Raccurt. Circulation des oocystes de *Cryptosporidium* dans les eaux de surface et de distribution par adduction publique à Port-au-Prince, Haïti (Colloque International "Gestion Integree de l'EAU en Haiti. Les 26, 27, 28 juin 2002).
- Fayer R., Santin M., Sulaiman I.M., Trout J., **Li X.**, Schaefer F. W., Xiao L., Lal A.A. Animal reservoirs, vectors, and transmission of microsporidia. Presented at: American Society of Tropical Medicine and Hygiene 51<sup>st</sup> Annual Meeting, Denver, CO, November 10~14, 2002.
- X. Li**, R. Fayer, J. Trout, M. Jenkins, R. Palmer. Effects of Gamma Irradiation on the Survival of *Encephalitozoon intestinalis* Spores. The VII International Workshop on Opportunistic Protists (IWOP-7), June 13~16, 2001, Cincinnati, Ohio, USA

- X. Li**, R. Fayer, J.M. Trout, J. Lunney. Infectivity of Microsporidia for Food Animals: Livestock and Poultry. American Society of Parasitologists' 76<sup>th</sup> Annual meeting, June 29~July 3, 2001, Albuquerque, New Mexico, USA.
- J. M. Trout, R. Fayer, **X. Li**, L. Xiao, J. Higgins and A. A. LAL. *Cryptosporidium*, *Giardia* and Microsporidia in beef cattle in Maryland. American Society of Parasitologists' 76<sup>th</sup> Annual meeting, June 29~July 3, 2001, Albuquerque, New Mexico, USA.
- Delaunay A., Gargala G., **Li X.**, Brasseur P., Favennec L. and Ballet J.J. Flow cytometric determination of suckling mouse infectivity for assesement of *Cryptosporidium parvum* oocyst viability in water. International Conference on Emerging Infectious Disease, Atlanta, July 16~19, 2000.
- Gargala G., Delaunay A., **Li X.**, Brasseur P., Favennec L. and Ballet J.J. In vitro efficacy of Nitazoxanide and its metabolites against *Cryptosporidium parvum* development in sporozoite Infected enterocytic cells. International Conference on Emerging Infectious Disease, Atlanta, July 16~19, 2000.
- X. Li**, P. Brasseur, A. Delaunay, P. Agnamey, L. Favennec, J.J. Ballet. Influence of temperature and storage duration on viability and infectivity of *Cryptosporidium parvum* oocysts in tap waters. 2000 Joint meeting of the American Society of Parasitologists & the Society of Protozoologists. June 24~28, 2000, San Juan, Puerto Rico.
- X. Li**, P. Agnamey, P. Vuong, G. Gargala, L. Favennec, J.J. Ballet, P. Brasseur. Infective *Cryptosporidium parvum* oocysts in mussels (*Mytilus edulis*) from the Northwest coast of France. 2000 joint meeting of the American Society of Parasitologists & the Society of Protozoologists. June 24~28, 2000, San Juan, Puerto Rico.
- X. Li\***, P. Brasseur, D. Lemeteil, P. Agnamey, L. Favennec, J.J. Ballet. Long-lasting anticryptodporidial activity of nitazoxanide in an immunosuppressed rat model. Congress "Infettivologia 2000--Infectious Diseases past and Future", Casale Monferrato, Italy, May 15~19, 2000.
- X. Li**, P. Brasseur, P. Agnamey, L. Favennec, J.J. Ballet. Influence de la temperature et de la durée de conservation dans l'eau des oocystes de *Cryptosporidium parvum* sur leur pouvoir infectant. Congrès De La Société Française De Parasitologie, Edude des

systèmes parasitaires: Du Satellite Au Microsatellite. Montpellier, France, Mars 1~3, 2000.

**X. Li**, C. Uguen, M.R. De Roubin, A. Bonnin, J.J. Ballet, P. Brasseur. Etude de la viabilité et de l'infectivité des oocystes de *Cryptosporidium parvum* d'origine hydrique.

Programme "Environnement Santé"---Contamination Microbiologique Des Eaux Et Des Aliments, Ministere De L'Aménagement Du Territoire Et De L'Environnement De Française, Paris, Janvier 27, 2000.

Gargala G., Delaunay A., **Li X.**, Faussart D., Brasseur P., Favennec L., Ballet J.J. Un modele de cellules HCT-8 infectees par des sporozoites de *Cryptosporidium parvum* pour l'étude de l'activité anti-parasitaire du nitazoxanide et de ses metabolites. 18<sup>ème</sup> réunion de la Club d'Edude des Cellules Epithéliales Digestives, Paris, Janvier 13~14, 2000.

#### **PUBLISHED ABSTRACTS**

**Li X**, Palmer RC, Trout JM, Fayer R. Effect of temperature extremes and chemical disinfectants on infectivity on microsporidian spores. Tektran, Agricultural Research Service, USDA, 2001.

**Li X**, Trout JM, Jenkins MC, Palmer RC, Fayer R. Effects of gamma radiation on survival of Encephalitozoon cuniculi, Encephalitozoon hellem, and Encephalitozoon intestinalis spores. Tektran, Agricultural Research Service, USDA, 2001.

**Li X**, Trout JM, Xiao L, Didier ES, Lunney JK, Fayer R. Inoculation of cattle, pigs, chickens and turkeys with microsporidia. Tektran, Agricultural Research Service, USDA, 2001.

Raccurt C, Verdier RI, **Li X**, Stockman Panier C, Guyot K. La cryptosporidiose humaine a Port-au-Prince (Haiti) en 2000. [Cryptosporidium humaine in Port-au-Prince (Haiti) in 2000]. Congres de l'Association Medicale Haitienne "Actualites en Infectiologie", 1-8, 2002

Bergamaschi BA, Atwill ER, Watanabe N, **Li X**, Harter TH. Occurrence, fate, and transport of pathogens and antibiotics in dairies. USGS Science for a Changing World and UC Davis, 2007.