

PROMOTION RECOMMENDATION  
UNIVERSITY OF MICHIGAN  
MEDICAL SCHOOL  
UNIT FOR LABORATORY ANIMAL MEDICINE  
DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY

Yongqun He, D.V.M., Ph.D., assistant professor of laboratory animal medicine, Unit for Laboratory Animal Medicine, and assistant professor of microbiology and immunology, Department of Microbiology and Immunology, Medical School, is recommended for promotion to associate professor of laboratory animal medicine, with tenure, Unit for Laboratory Animal Medicine, and associate professor of microbiology and immunology, without tenure, Department of Microbiology and Immunology, Medical School.

Academic Degrees:

M.S.	2002	Virginia Polytechnic Institute and State University
Ph.D.	2000	Virginia Polytechnic Institute and State University
M.V.Sc.	1996	Beijing Agricultural University, China
D.V.M.	1991	Jiangxi Agricultural University, China

Professional Record:

2005-present                      Assistant Professor of Laboratory Animal Medicine and Assistant Professor of Microbiology and Immunology, University of Michigan

Summary of Evaluation:

Teaching: Dr. He has been very active as a teacher in the classroom and in the laboratory, devoting approximately 30% of his effort to instruction. He has been the instructor or co-instructor in two graduate level courses (Microbiology and Immunology and in Bioinformatics) and an invited speaker in a number of other courses. Dr. He designed and taught "Bioinformatics Web (Bioinformatics 800.006)," a new course that focused on tools that researchers can use for the retrieval and analysis of biological data available on the Internet. He has also taught in ULAM's multicourse seminar series for veterinary residents in the postdoctoral laboratory animal medicine training program. Dr. He has been very active in training within the laboratory setting. He has had three graduate students and two post-doctoral fellows. He has served on dissertation committees for two Ph.D. graduate students in the Medical School and one at Virginia Polytechnic Institute and State University (Virginia Tech). He also has served on eight student preliminary examination committees. In addition, he has had fourteen undergraduate students in his laboratory and four veterinary student summer externs. ULAM routinely has two to four veterinary students in both research and clinical externships every summer, each spending 12-16 weeks with us. Dr. He's laboratory provides a unique interdisciplinary research experience for these students because of the exposure to both basic and translational research in infectious diseases and in bioinformatics.

Research: Dr. He conducts research on important infectious diseases of humans and animals. He is becoming an important figure in vaccine informatics. He led an effort to develop the first research-oriented comprehensive vaccine database and analysis system VIOLIN

(<http://www.violinet.org>) and directed the development of a community-based Vaccine Ontology (VO), which is being used for advanced vaccine literature mining. In *Brucella* vaccine research, Dr. He identified a unique mechanism for caspase-2-mediated proinflammatory cell death that is induced by live attenuated rough *Brucella* strains (e.g., *Brucella* cattle vaccine RB51), but is inhibited by virulent smooth *Brucella* strains. This observation may lead to the development of a new *Brucella* vaccine. His publication record is very good with 18 publications since his arrival at Michigan, 15 as first or last author. His funding record is also very good. Currently, his vaccine informatics research is funded by a NIH R01 grant and his *Brucella* vaccine studies by a NIH R21 grant. He is also a collaborator (10%) on an NCIBI grant (B. Athey, PI). He previously had an R21 from NIAID.

#### Recent and Significant Publications:

He Y, Xiang Z, Todd T, Courtot M, Brinkman R, Zheng J, Stoeckert CJ, Malone J, Rocca-Serra P, Sansone S, Fostel J, Soldatova LN, Peters B, Rutterberg A: Ontology representation and ANOVA analysis of vaccine protection investigation. Proceeding of Bio-Ontologies 2010: Semantic Applications in Life Sciences, ISMB, July 9-10, 2010. Boston, MA, USA. Full length paper (4 pages). Accepted.

Hodges AP, Dai D, Xiang Z, Woolf P, Xi C, He Y. Bayesian network expansion identifies new ROS and biofilm regulators. *PLoS ONE* 5:e9513, 2010.

Chen F, He Y: Caspase-2 mediated apoptotic and necrotic murine macrophage cell death induced by rough *Brucella abortus*. *PLoS ONE* 4:e6830, 2009.

Xiang Z, Todd T, Ku KP, Kovacic BL, Larson CB, Chen F, Hodges AP, Tian Y, Olenzek EA, Zhao B, Colby LA, Rush HG, Gilsdorf JR, Jourdain GW, He Y: VIOLIN: Vaccine Investigation and Online Information Network. *Nucleic Acids Research*. Vol. 36, Database issue D923-D928, 2008.

He Y, Reichow S, Ramamoorthy S, Ding X, Lathigra R, Craig JC, Sobral BW, Schurig GG, Sriranganathan N, Boyle SM: *Brucella melitensis* triggers time-dependent modulation of apoptosis and down-regulation of mitochondria-associated gene expression in mouse macrophages. *Infection and Immunity* 74:5035-5046, 2006.

Service: Dr. He has provided valuable service to the university and his profession. He is an active member of the International Society for Computational Biology, the International Society for Vaccines, and the Overseas Chinese Society for Microbiology (serves as communication officer). He serves on the Ontology for Biomedical Investigations (OBI) Consortium Committee. He has served as an ad hoc reviewer for a number of journals and as lead guest editor for a "Special Issue on Vaccine Informatics" in the *Journal of Biomedicine and Biotechnology*. He is also on the editorial review board of *Frontiers in Cellular Microbiology*. He has been of great service to ULAM and the Medical School. He has served on ULAM's NIH T32 grant executive committee and the laboratory design and review group of the Animal Biosafety Level 3 (ABSL-3) Committee. He is currently the bacterial laboratory director for the ABSL3 facility. He has also served on two CCMB committees, the Web Site Design Group and the Curriculum Group.

External Review:

Reviewer A: “Oliver has made an excellent start to his academic career. Since becoming an Assistant Professor in 2005 he has published 19 papers, including 15 as first or senior author. This equates to a very respectable 3 senior/first author and one coauthor paper per year. The five papers that he has selected to represent his research are excellent examples. However, I would add that his four papers in the *Journal of Biomedicine and Biotechnology* on informatics are also very important as they represent papers that are on the cutting edge of ‘computational biology’, which is becoming recognized as a new area of research...”

Reviewer B: “...his publication on an ontology of vaccine protection investigation reflects his interest and ability to both develop novel new approaches to ontology construction, and also to employ the most current strategies in computational investigations of biological systems.”

Reviewer C: “From review of Dr. He’s CV it is readily apparent that he thrives in an academic environment, particularly in interdisciplinary collaborative research...He has consistently demonstrated faculty achievement in collaborative research, clinical research, and extra-university service.”

Reviewer D: “His research and application of VIOLIN, Vaxign and VO are being picked up, used and referenced to in other studies. Regarding focus, his work has a developing and related theme toward understanding host-pathogen interactions as they relate to a better understanding for developing novel vaccines for human use.”

Reviewer E: “In summary, I think Dr. He’s curriculum vitae documents that he is an active and productive investigator [of his cohort] and that he has a bright future in science. He has proven that he can establish and support his own independent research program and has gained the respect of his peers.”

Summary of Recommendation:

Dr. He is an important and valuable member of the ULAM and Microbiology and Immunology faculties. He has excelled as a teacher, scientist, and member of the academic community. He has national and international standing in his research. I am pleased to recommend Dr. He for promotion to associate professor, with tenure in the Unit for Laboratory Animal Medicine, and associate professor, without tenure, in the Department of Microbiology and Immunology.



James O. Woolliscroft, M.D.

Dean

*Lyle C. Roll Professor of Medicine*

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