

PROMOTION RECOMMENDATION

The University of Michigan-Dearborn
College of Arts, Sciences, and Letters
Department of Natural Sciences

Approved by the Regents

May 15, 2008

Sonia M. Tiquia, assistant professor of biology and microbiology, Department of Natural Sciences, College of Arts, Sciences, and Letters, is recommended for promotion to associate professor of biology and microbiology, with tenure, Department of Natural Sciences, College of Arts, Sciences, and Letters.

Academic Degrees:

Ph.D. 1997	University of Hong Kong	Research Preceptor: Prof. John Hodgkiss
B.S. 1991	Central Luzon State University, Philippines	

Professional Record:

2003 - present	Assistant Professor of Biology and Microbiology, Department of Natural Sciences, University of Michigan-Dearborn
Summer 2007	Visiting Research Professor, Biosciences Division, DOE Oak Ridge National Laboratory, Oak Ridge, TN
Summer 2006	Visiting Research Professor, Biosciences Division, DOE Oak Ridge National Laboratory, Oak Ridge, TN
2001 -2003	Research Staff, Microbial Genomics and Ecology Group, Oak Ridge National Laboratory, Oak Ridge, TN
1999 - 2001	Research Scientist, Department of Food, Agricultural & Biological Engineering, The Ohio State University, Ohio Agricultural R and D Center
1998 - 1999	Research Associate, Department of Agriculture & Biosystems Engineering, Iowa State University, Ames, IA

Summary of Evaluation:

Teaching: Professor Tiquia's teaching is rated as excellent. She has taught a variety of courses, ranging from introductory biology to upper-level and graduate courses in microbiology. She has improved instructional programs through the development and implementation of new courses and innovative teaching methods, has developed and introduced new technique-driven laboratory exercises, and has implemented technology-enhanced learning tools. Her teaching philosophy encourages students to be actively involved in the classroom and to develop as independent learners. Her students praise her for the high quality of the laboratory and lectures and the positive manner in which they are organized.

Research: Professor Tiquia's research is rated as excellent. Her research field is environmental microbiology. She develops and uses molecular tools, genomics, and cultivation techniques to characterize novel organisms, microbial consortia, communities, activities, and other novel properties and to study the roles of microorganisms in diverse environments. Her research has been supported by funds from US-DOE, Office of the Vice President for Research,

Rackham, and UM-Dearborn campus grants. Her research productivity has been continuous since 1994, and there is no doubt it will continue. One of the hallmarks of her research has been active mentoring and involvement of undergraduates in her research. During the past four years fourteen undergraduate students have been co-authors on peer-reviewed publications.

Recent and Significant Publications:

- S.M. Tiquia, D. Davis, H. Hadid, S. Kasparian, M. Ismail, R. Sahly, J. Shim, S. Singh and K.S. Murray, "Halophilic and halotolerant bacteria from river waters and shallow groundwater along the Rouge River of Southeastern Michigan," *Environmental Technology*. 28: 297-307, 2007.
- M. Gentile, T. Yan, S.M. Tiquia, M.W. Fields, J. Nyman, J. Zhou, and C.S. Criddle, "Stability and resilience in a denitrifying fluidized bed reactor," *Microbial Ecology* 52 (2) 311-321, 2006.
- S.M. Tiquia, S. Gureczynski, A. Zholi, and A. Devol, "Diversity of biogeochemical cycling genes from Puget Sound sediments using DNA microarrays," *Environmental Technology* 27: 1377-1389, 2006.
- S.M. Tiquia, S.A. Masson and A.H. Devol, "Vertical distribution of nitrite reductase (*nirS*) genes in continental margin sediments of the Gulf of Mexico," *FEMS Microbiology Ecology* 58:464-475, 2006.
- S.M. Tiquia, J.M. Ichida, H.M. Keener, D. Elwell, E. Burt, Jr., and F.C. Michel, Jr., "Bacterial community structure on feathers during composting as determined by terminal restriction fragment length polymorphism analysis of 16S rDNA genes," *Applied Microbiology and Biotechnology* 67 (3) 412-419, 2005.
- S.M. Tiquia, "Microbial community dynamics in manure composts based on 16S and 18S rDNA T-RFLP profiles," *Environmental Technology* 26 (10): 1104-1114, 2005.
- S.M. Tiquia, "Microbiological parameters as indicators of compost maturity," *Journal of Applied Microbiology* 99: 816-828, 2005.
- W. Wu, B. Gu, M.W. Fields, M. Gentile, Y-K Ku, H. Yan, S.M. Tiquia, T. Yan, J. Nyman, J. Zhou, P.M. Jardine, and C.S. Criddle, "Uranium (VI) reduction by denitrifying biomass," *Bioremediation Journal*, 9: 49-61, 2005.
- S.M. Tiquia, L. Wu, S.C. Chong, P. Sergei, D. Xu, Y. Xu, and Zhou, "Evaluation of 50-mer oligonucleotide arrays for detecting microbial populations in environmental samples," *Journal of BioTechniques*. 36: 664-675, 2004.
- (undergraduate student co-authors are underlined)

Service: Professor Tiquia's service is rated as excellent. Her service includes a wide range of activities and levels of participation. In the Department, she has served as chair and concentration advisor for the Microbiology Program and as a member of the Environmental Science Graduate Program Committee and the Organic Chemistry Faculty Search Committee. Her service in professional organizations is exemplary. She is U.S. editor for *Environmental Technology*, and she is on the editorial boards for *Process Biochemistry* and *Bioresource Technology*. She has reviewed chapters for a microbiology textbook and has mentored or served as a dissertation committee member for six master's and Ph.D. students at five universities. She has leadership roles in the Michigan Branch of the American Society for Microbiology (ASM), and she chaired and hosted an ASM conference on the UM-Dearborn campus (Fall 2005). She has served as a manuscript reviewer for more than ten journals.

External Reviewers:

Reviewer A: "The most impressive aspect of her performance is her ability to continuously publish quality papers. I particularly like her work on denitrification in a fluidized bed reactor. Her publication record alone would most likely get her tenure and promotion at many institutions including my own."

Reviewer B: "Dr. Tiquia is a strong researcher. She is generating a number of good quality publications... I am impressed by her publication record since joining UM-Dearborn."

Reviewer C: "Dr. Tiquia has demonstrated a very good quality of scholarly activity during four years. ...her peer reviewed publication record is excellent.... To be on several journal Editorial Boards as an Assistant Professor is outstanding."

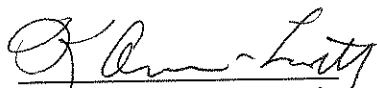
Reviewer D: "The publications are very good, solid science. I am very impressed by the volume of work. Overall, her work would add to the knowledge base regarding microbial interactions in a variety of ecosystems."

Reviewer E: "... many of her publications have been cited in many other articles indicating that they are of value to other researchers. Dr. Tiquia's 2007 Environmental technology article ...When I considered the author list of this article...most of her co-authors are undergraduates. I know that this is a large achievement."

Reviewer F: "Dr. Tiquia's scholarship is well above average for her peer group. She has been effective in recruiting undergraduate students as researchers, and has collaborators at several different well-regarded institutions. She has a strong focus on applied microbiology...."

Summary of Recommendation:

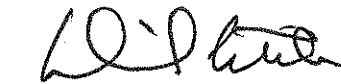
Professor Tiquia has been rated excellent in research, teaching and service. She is an excellent teacher and a creative scholar who has made excellent contributions to the biology program, and to the Department. She is a leader in the field of Environmental Microbiology. Her service to the biology profession is exemplary. We are very pleased to recommend, with the strong support of the College of Arts, Sciences, and Letters Executive Committee, Sonia M. Tiquia for promotion to associate professor of biology and microbiology, with tenure, in the Department of Natural Sciences, College of Arts, Sciences, and Letters.



Kathryn Anderson-Levitt

Dean

College of Arts, Sciences, and Letters



Daniel Little

Chancellor

University of Michigan-Dearborn

May 2008