THE UNIVERSITY OF MICHIGAN
REGENTS COMMUNICATION

PROMOTION RECOMMENDATION

University of Michigan-Flint
College of Arts and Sciences
Department of Mathematics

Shu-Yi Tu, assistant professor of mathematics, Department of Mathematics, College of Arts and Sciences, is recommended for promotion to associate professor of mathematics, with tenure, Department of Mathematics, College of Arts and Sciences.

Academic Degrees:

Ph.D.	1999	University of California, Santa Barbara
M.A.	1995	University of California, Santa Barbara
B.S.	1993	Tung-Hai University (Tai-Chung, Taiwan)

Professional Record:

2001 to Present	Assistant Professor, Department of Mathematics, University of Michigan-Flint
1999 to 2001	Assistant Professor, St. Cloud State University
1998 to 1999	Teaching Associate, University of California
1994 to 1998	Teaching Assistant, University of California
1992 to 1993	Teaching Assistant, Tung-Hai University, Tai-Chung, Taiwan

Summary of Evaluation:

Teaching – Dr. Tu is a dedicated, successful and versatile teacher of a subject that students often love to hate. Over six years she has taught thirteen different preparations, earned consistently high student approval ratings, positive peer evaluations, and positive feedback from former students. Dr. Tu is accessible to students, and an active participant in pedagogical sessions and Teaching Circles at the University.

Research – Over six years, Dr. Tu has published four articles in scholarly journals, two refereed conference papers, has two additional articles accepted and in press, three papers under review, and three additional projects in progress. She has fifteen presentations in venues ranging from department seminars to international conferences. Dr. Tu's research has been favorably evaluated by her peers and shows no sign of diminishing.

Recent and Significant Publications:
Sideris, T. C., and Tu, S.Y. "Global Existence for Systems of Nonlinear Wave Equations in 3D with Multiple Speeds." *SIAM Journal (Society for Industrial and Applied Mathematics)*, Mathematical Analysis. Vol. 33-2 (2001), pp. 477-488.

Jean, M. D., Tu, S. Y., and Wang, J. T. "Comparative Analysis of Artificial Neural Networks and Multiple Linear Regressions for Powder Hardfacing Processes," *2004 Proceedings of the American Statistical Association*, Section on Physical & Engineering Sciences [CD-Rom], Alexandria, VA: American Statistical Association, (2004), pp. 2035-2039.

Jean, M. D., Tu, S. Y., and Wang, J. T. "Analysis of Hardfacing Appearance of Specific Powdered Superalloys for PTA-Coating Processes," *Journal of Materials Engineering and Performance*. Vol. 14, No. 3 (June 2005), pp. 307-314.

Tu, S. Y., Jean, M. D., Wang, J. T., and Wu, C. S. "A Robust Design in Hardfacing Using Plasma Transfer Arc," *IJAMT (The International Journal of Advanced Manufacturing Technology)*. Vol. 27, No. 9-10 (2006), pp. 889-896.

Paper accepted and in press:

Yang, H., Lu, B., and Tu, S. Y. "Another Note on the Mean Value Theorem," was accepted by *Primus* in March 2006. This paper will run in late 2006 or early 2007.

Conference papers:

Tu, S. Y., Wang, J. T., and Jean, M. D. "A Study of Characteristics of Deposited Zirconia and the Optimal Conditions in Plasma Spraying," *PMMT 2006 (The 4th Conference on Precision Machinery and Manufacturing Technology)*, pp A46-1-A46-11.

Tu, S. Y., Tsai, J. S., and Jean, M. D. "Design and Analysis of a Fuzzy Control Approach for Zirconia Depositions Using Plasma Spraying." *PMMT 2006 (The 4th Conference on Precision Machinery and Manufacturing Technology)*, pp A47-1-A46-10.

Service – Dr. Tu has actively participated in the life of her department by serving on or chairing various internal committees. She has served the College through her work on the Nominating and Academic Standards Committees, the University through service on its Nominating Committee, and the community by her active participation in the Department's Math Field Day. Her committed service makes her an excellent colleague.

External Reviewers:

Reviewer (A):
"Dr. Shu-Yi Tu's main research has been on developing and applying various deterministic and statistical techniques to study important mathematical models in science and engineering. This is one of the most exciting and important research directions in present-day applied mathematics. Dr. Tu has made several outstanding contributions in this direction."

Reviewer (B):
"Professor Tu is an excellent addition to any research and teaching institution."

Reviewer (C):
"Overall the candidate has a good and increasing involvement in research & administration and shows considerable promise."

Reviewer (D):
"... all her papers were well written and the quality was good. Dr. Tu's major research strength is her ability to combine theory and practice in her work."

Reviewer (E):
"Dr. Tu has produced a significant body of work ranging from theoretical results in nonlinear wave equations to the development and application of mathematical techniques in materials science and manufacturing technology. She has also produced important work in mathematical pedagogy."
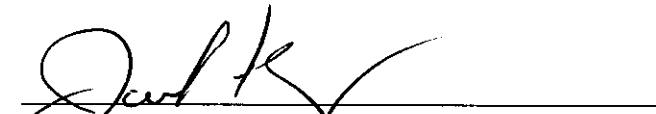
Summary of Recommendation:
Over six years, Dr. Tu has proven her worth through fine teaching, excellent scholarship and committed service. She has earned promotion to the rank of associate professor, with tenure. We therefore enthusiastically recommend Shu-Yi Tu to the title of associate professor of mathematics, with tenure, Department of Mathematics, College of Arts and Sciences.

Recommended by:

Christine Waters, Acting Dean
College of Arts and Sciences

Recommendation endorsed by:

Jack Kay, Acting Chancellor and
Provost and Vice Chancellor for Academic Affairs

May 2007