

PROMOTION RECOMMENDATION
University of Michigan – Dearborn
College of Engineering and Computer Science
Department of Industrial and Manufacturing Systems Engineering

Yung-Wen Liu, assistant professor of industrial and manufacturing systems engineering, Department of Industrial and Manufacturing Systems Engineering, College of Engineering and Computer Science, is recommended for promotion to associate professor of industrial and manufacturing systems engineering, with tenure, Department of Industrial and Manufacturing Systems Engineering, College of Engineering and Computer Science.

Academic Degrees:

Ph.D.	2006	Industrial Engineering, University of Washington, Seattle, WA
M.A.	2000	Applied Statistics, University of Michigan, Ann Arbor, MI
M.A.	2000	Applied Economics, University of Michigan, Ann Arbor, MI
B.B.A.	1995	Statistics, Fu Jen Catholic University, Taipei, Taiwan

Professional Record:

2006 - present	Assistant Professor, Department of Industrial and Manufacturing Systems Engineering, University of Michigan-Dearborn, Dearborn, MI
2003-2006	Biostatistician Research Associate, Department of Urology, University of Washington, School of Medicine, Seattle, WA

Summary of Evaluation:

Teaching: Professor Liu is rated excellent in teaching. He is an outstanding teacher at both the graduate and undergraduate level. Since joining the Department of Industrial and Manufacturing Systems Engineering (IMSE) in 2006, Professor Liu's course evaluations are consistently among the best in the department. Students consider Professor Liu to be effective and knowledgeable instructor who is always prepared for the class. Students had many positive comments about his concern on student learning and his willingness to help. Over the past four years his average ratings to two of the student evaluation questions "How would you grade him/her?" and "On overall basis, how would you rate this course?" were 3.3 and 3.03 respectively (on a 4 point scale). In terms of student overall instructor and course evaluations Professor Liu's teaching performance ranks in the top 15% in IMSE department.

Since joining IMSE department in 2006, Professor Liu taught graduate and undergraduate courses of varying class sizes in industrial and system engineering and manufacturing engineering programs. He revised and updated two graduate level courses in statistics and optimization for Industrial and Systems Engineering masters program that department had not offered for more than four years. He taught these courses regularly and consistently received excellent student evaluations for these courses. In 2011, he also developed a new graduate course in Quantitative Methods in Quality Engineering. He also supervised one Master thesis dissertation and currently a thesis advisor for Ph.D. student in Automotive Systems Engineering program.

Research: Professor Liu is rated excellent in his research. His research focuses on healthcare modeling, applied statistics and reliability and maintainability engineering. His most recent research activities are focused on development of new statistical based modeling techniques for improving patient care and addressing healthcare disparities. Over the years he has been also successfully collaborating with his

colleagues at hospitals to address important health issues using statistical methods. He published ten papers and several of them in top tier journals in the area of healthcare and reliability. In addition, Professor Liu has several refereed and non-referred conference proceedings. The impact of his work can be evidenced by publications in leading journals and the use of his research in local hospitals.

Recent and Significant Publications:

- Nerenz, D.R., Liu, Y., Williams, L.K., Tunceli, K., and Zeng, H., "Analysis of the Business Case for Eliminating Disparities – Employer Perspective," *BMC Research Methodology*, vol. 11, no. 31, 2011.
- Liu, Y. and Kapur, K.C., "Customer-Centered Multi-State System Reliability and Repair Models," *Quality Technology and Quantitative Management*, vol. 7, no. 4, pp. 385-394, 2010.
- Aubin, S., Heiman, J.R., Berger, R.E., Murallo, A.V., and Liu, Y., "Comparing Sildenafil Alone Vs. Sildenafil Plus Brief Couple Sex Therapy on Erectile Dysfunction and Couples' Sexual and Marital Quality of Life: A Pilot Study," *Journal of Sex and Marital Therapy*, vol. 35 no. 2, pp. 122 – 143, 2009.
- Liu, Y. and Kapur, K.C., "New Patient-Centered Models of Quality of Life Measures for Evaluation of Interventions for Prostate Cancer," *Healthcare Issue of IIE Transactions*, vol. 40, no. 9, pp. 870-879, 2008.
- Yilmaz, U., Liu, Y., Berger, R.E. and Yang, C.C., "Autonomic Nervous System Changes in Men with Chronic Pelvic Pain Syndrome," *Journal of Urology*, vol. 117, no. 6, pp. 2170-2174, 2007.
- Liu, Y. and Kapur, K.C., "Customer's Cumulative Experience Measures for Multi-State Reliability," *Quality Technology and Quantitative Management, Special Issue on "New and Emerging Trends in Reliability,"* vol. 4, no. 2, pp. 69-78, 2007.

Service: Professor Liu is rated excellent in his service. He was IMSE faculty secretary in 2006-2007 academic year and since 2009 he is the faculty advisor to IIE Student Chapter 900. Dr Liu is a member of University's Institutional Review Board Human Subjects Committee and an advisor to Dearborn Campus Engineers. Professor Liu has been a technical reviewer to several top tier journals in his field, served as an associate editor of *International Journal of Performability Engineering* and was actively engaged in professional conference organizations by organizing several technical sessions for IIE annual conference and INFORMS annual conference. His service to industrial and systems engineering academic profession is excellent.

External Reviewers:

Reviewer A: "What I find impressive is that the body of research Dr. Liu has produced is squarely at the intersection of industrial engineering, statistics and healthcare administration. Given that the goals of our profession are to engineer solutions for the greater problems of today, which are inherently multidisciplinary in nature, this is precisely the kind of research that we need to encourage within our ranks."

Reviewer B: "I believe Dr. Liu has an outstanding record of scholarship in regard to archival journal publications. A good portion of his publications are in top-level journals which is indicative that his work is of high quality."

Reviewer C: "All of his first authored papers focus on developing reliable models for evaluating intervention/health care system. Those models are flexible and dynamic and have significant potential in reducing or eliminating health care disparities, which are very crucial to achieving health care equality."

Reviewer D: “Dr. Liu’s research has demonstrated quality and impact in several dimensions as well. Dr. Liu’s research topics address what I believe are important shortcomings in current modeling techniques, also increasing the impact that his work is likely to have. In particular, the paper entitled ‘New Patient-Centered Models of Quality-of-Life Measure for Evaluation for Interventions of Multi-Stage Disease’ is outstanding in this respect. Incorporating the patients’ viewpoint into the model, through a disutility function, is innovative and reflects current interests in medicine to better tailor treatments to individuals.”

Reviewer E: “I am intrigued by Dr. Liu’s work on his healthcare problems. It is refreshing to see that he has been successfully collaborating with his colleagues at hospitals to address important health issues using statistical methods.”

Reviewer F: “His research clearly demonstrates the depth of his knowledge and skills he has acquired during his remarkable academic career as an educator and able scholar.”

Summary of Recommendation: Professor Liu is an excellent teacher and researcher who contributes significant and meaningful service both externally and internally. He is an effective and excellent teacher who distinguished himself by his dedication to student learning and willingness to help. His research work is judged to be of very high quality both by his peers in the department and outside the University. His service to the University and to industrial engineering academic profession is excellent. It is with the support of the College of Engineering and Computer Science Executive Committee that I recommend Yung-Wen Liu for promotion to associate professor of industrial and manufacturing systems engineering, with tenure, Department of Industrial and Manufacturing Systems Engineering, College of Engineering and Computer Science.



Subrata Sengupta, Dean
College of Engineering and Computer Science



Daniel Little, Chancellor
University of Michigan-Dearborn

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