Approved by the Regents
May 20, 2010

PROMOTION RECOMMENDATION
The University of Michigan-Dearborn
College of Engineering and Computer Science
Department of Mechanical Engineering

German Reyes-Villanueva, assistant professor of mechanical engineering, Department of Mechanical Engineering, College of Engineering and Computer Science, is recommended for promotion to associate professor of mechanical engineering, with tenure, Department of Mechanical Engineering, College of Engineering and Computer Science.

Academic Degrees

Ph.D. 2002	Materials Science and Engineering, University of Liverpool, Liverpool
M.S. 1997	Steel Metallurgy, Technological Institute of Morelia, Morelia, Mexico
B.S. 1995	Steel Metallurgy, Technological Institute of Morelia, Morelia, Mexico

Professional Record

2003 – Present	Assistant Professor, Department of Mechanical Engineering, University of Michigan-Dearborn

Summary of Evaluation:

Teaching: Professor Reyes-Villanueva's teaching is rated excellent. Professor Reyes-Villanueva is an excellent educator, both inside and outside of the classroom. He has taught a range of courses, from lower-level materials course to an upper-level class on materials and manufacturing, all required for the undergraduate students of mechanical engineering. He has also developed four new graduate courses and one new upper-level technical elective course in the area of his expertise. Recently, he has taken initiative to re-design the existing core course for the undergraduate students, ME 381. His effort in developing better and up-to-date materials for this initiative is excellent. His performance in the classroom has yielded an average effectiveness of above ~3.6 out of 4.0 over the past three years was. He puts significant effort into class preparation and into helping his students learn and he is highly appreciated by the students and his peer faculty members.

Professor Reyes-Villanueva is also an understanding mentor. Since joining Dearborn, he has supervised three senior design projects, five M.S. theses, and published research papers with these students in open literature. In addition, he has two more M.S. theses currently under his supervision.

Research: Professor Reyes-Villanueva's research is rated significantly capable. His research focuses on the subject areas of impact resistant hybrid multifunctional systems including cellular materials and metallic foams, polymer matrix composites and light metal alloys that can be used in energy absorbing applications such as body and vehicle armor, airplane fan containment structures, engine turbine and aeronautical applications. Furthermore, the investigation of ballistic impact properties, blast resistance, damage and failure prediction modeling of advanced materials are also of interest. He has published nine papers in refereed journals in his area of expertise since coming to the University. In addition, he has published 31 conference papers, most of which were peer-reviewed. Prior to joining the university, he published four journal

papers. The external reviewers and faculty assessment assert that these papers are of good quality. Professor Reyes-Villanueva has written many proposals during his time at the University and he has successfully obtained one NSF grant on major research instruments. He also has obtained five internal grants and participated in a DOE grant led by Professor P.K. Mallick.

Recent and Significant Publications:

Reyes, G., "Mechanical Behavior of Thermoplastic FML Reinforced Sandwich Panels Using an Aluminum Foam Core: Experiments and Modeling," *Journal of Sandwich Structures and Materials*, in press (2009).

Reyes, G., and Gupta, S., "Manufacturing and Mechanical Properties of Thermoplastic Hybrid Laminates Based on DP500 Steel," *Composites Part A: Applied Science and Manufacturing*, 40 (2009) pp. 176-183.

Lei, Z., Kang, H.T., and Reyes, G.," Full Field Strain Measurement of Resistant Spot Welds Using 3D Image Correlation Systems," *Journal of Experimental Mechanics*, 10.1007/s11340-008-9186-5 (2008).

Reyes, G., "Static and Low Velocity Impact Behavior of Composite Sandwich Panels with an Aluminum Foam Core," *Journal of Composite Materials*, 42, *(16)* (2008) pp. 1659- 1670.

Reyes-Villanueva, G. and Kang H., "Mechanical Behavior of Lightweight Thermoplastic Fiber-Metal laminates", *Journal of Materials Processing Technology*, 86 *(1-3)* (2007) pp. 284-290.

Kang, H., and Reyes-Villanueva, G., "Fatigue Prediction of Lightweight Thermoplastic Fiber-Metal laminates," *Journal of Testing and Evaluation*, 35, *(3)* (2007) pp. 266-271.

Reyes-Villanueva, G., and Gupta S., "Interfacial Fracture Properties of Environmentally Friendly Hybrid Systems," *Journal of Materials Science*, 41, 18 (2006) pp. 6142-6145.

Reyes Villanueva, G., and Cantwell, W.J., "The High velocity impact response of composite and FML-reinforced aluminum foam sandwich structures," *Composites Science and Technology*, 64 (2004), pp. 35-54.

Reyes Villanueva, G., and Cantwell, W.J., "Low Velocity Impact Response of Novel Fibre-Reinforced Aluminum Foam Sandwich Structures," *Journal of Materials Science Letters*, (2003) 22, pp. 417-422.

Service: Professor Reyes-Villanueva's service is rated excellent. He has served on a few department and college committees. He served as a referee for several journals and conference proceedings and also chaired sessions in conferences multiple times.

External Reviewers:

Reviewer A: "I also note that his papers are published in good quality journals, which indicates to me that his research peers hold his work in high regard. If he were being considered for promotion to Associate Professor at [my institution], his research record would certainly be on a par with many of our successful candidates."

Reviewer B: "I believe that Professor Reyes has made strong impacts through his teaching and services and he has demonstrated his capability and contributions to the field of composites through his research. I highly support his tenure and promotion without hesitation."

Reviewer C: "He has demonstrated sufficient and good quality work in the main different activities: research and scholarly activity, teaching and professional development, and service."

Reviewer D: "Dr. Reyes' research results have been published on well-known journals with his own students as well as his colleagues."

Reviewer E: "I believe Dr. Reyes has demonstrated very good performance to-date and strong potential for continued development past the rank of associate professor."

Summary of Recommendation:
Professor Reyes-Villanueva is an excellent teacher and has made significant contributions to his research area of his expertise. His research work is judged to be of good quality by his peers both in the ME department and outside the University. He is considered by his peers to be on the way to becoming a successful researcher and an even stronger contributor to his area of expertise in the future. Professor Reyes-Villanueva is an excellent teacher at both undergraduate and graduate levels, and his teaching effectiveness ranks in the top 15% among the ME faculty. He has willingly contributed his time and effort to a variety of committee services in the ME department, in the College of Engineering and Computer Science, and in professional societies. We are very pleased to recommend, with the strong support of the faculty of the College of Engineering and Computer Science Executive Committee, German Reyes-Villanueva for promotion to associate professor of mechanical engineering, with tenure, Department of Mechanical Engineering, College of Engineering and Computer Science.

Subrata Sengupta
Dean
College of Engineering and Computer Science

Daniel Little
Chancellor
University of Michigan-Dearborn

May 2010