

## PROMOTION RECOMMENDATION

University of Michigan  
College of Engineering

Gustavo Parra-Montesinos, assistant professor civil and environmental engineering, Department of Civil and Environmental Engineering, College of Engineering, is recommended for promotion to associate professor of civil and environmental engineering, with tenure, Department of Civil and Environmental Engineering, College of Engineering.

### Academic Degrees:

B.S. 1994 Universidad Metropolitana, Venezuela, Civil Engineering  
M.S. 1997 University of Michigan, Civil Engineering  
Ph.D. 2000 University of Michigan, Civil Engineering

### Professional Record:

2000 to present	Assistant Professor of Civil and Environmental Engineering, University of Michigan
1998-2000	Research Assistant, University of Michigan
1999	Teaching Assistant, University of Michigan
1995-1996	Structural Engineer, RIDAFE, C.A., Venezuela
1994-1995	Civil Engineer, ESCAM, S.C., Venezuela
1993	Intern, Vilis Vitols Engineering Office, Venezuela
1992-1995	Teaching Assistant, Universidad Metropolitana

### Summary of Evaluation:

Teaching: Professor Parra-Montesinos has demonstrated that he is very effective—both in the classroom and in working with students outside of the classroom. In addition, Professor Parra-Montesinos is successful in supervising students in teaching and research. Since joining the CEE faculty, Professor Parra-Montesinos has taught seven courses. The evaluations indicate a high level of ability, preparation, and devotion to his teaching responsibilities.

Research: Professor Parra-Montesinos has made seminal contributions to the development, implementation, and application of dynamic structural analysis of composite structures. His pioneering research provided novel formulations for fiber-reinforced cement composites, which have improved the performance of building response to earthquake and other extreme loads. His contributions also include structural analysis and design of steel buildings and the development of new technical guidelines in the U.S. building code.

### Recent and Significant Publications:

Parra-Montesinos, G.J., Dasgupta, P., and Goel, S.C. (2005). "Development of Connections between Hybrid Steel Truss-FRC Beams and RC Columns for Precast Earthquake Resistant Framed Construction," *Engineering Structures*, Vol. 27, pp. 1931-1941.

Parra-Montesinos, G. (2005). "High-Performance Fiber Reinforced Cement Composites: A New Alternative for Seismic Design of Structures," *ACI Structural Journal*, Vol. 102, No. 5, pp. 668-675.

- Parra-Montesinos, G.J., Bobet, A., and Ramirez, J.A. (2005). "Evaluation of Soil-structure Interaction and Structural Collapse in Daikai Subway Station during Kobe Earthquake," *ACI Structural Journal*, in press.
- Parra-Montesinos, G.J., Peterfreund, S., and Chao, S.-H. (2005). "Highly Damage Tolerant Beam-Column Joints Through Use of High-Performance Fiber Reinforced Cement Composites," *ACI Structural Journal*, Vol. 102, No. 3, pp. 487-495.
- Canbolat, B.A., Parra-Montesinos, G.J., and Wight, J.K. (2005). "Experimental Study on the Seismic Behavior of High-Performance Fiber Reinforced Cement Composite Coupling Beams," *ACI Structural Journal*, Vol. 102, No. 1, pp. 159-166.
- Parra-Montesinos, G., and Naaman, A. E. (2004). "Parametric Evaluation of the Bending Response of Ferrocement and Hybrid Composites with FRP Reinforcements," *Journal of Ferrocement*, Vol. 34, No. 2, pp. 341-352.
- Liang, X., and Parra-Montesinos, G. (2004). "Seismic Behavior of RCS Beam-Column-Slab Subassemblies and Frame Systems," *Journal of Structural Engineering*, ASCE, Vol. 130, No. 2, pp. 310-319.
- Parra-Montesinos, G., Liang, X., and Wight, J. K. (2003). "Towards Deformation-Based Capacity Design of RCS Beam-Column Connections," *Engineering Structures*, Vol. 25, No. 5, pp. 681-690.
- Wight, J. K., and Parra-Montesinos, G. (2003). "Use of Strut and Tie Model for Deep Beam Design as Per ACI 318 Code," *Concrete International*, ACI, Vol. 25, No. 5, pp. 63-70.

Service: Professor Parra-Montesinos has been very active in the engineering profession and has risen steadily to a level of prominence in the national civil engineering community. His principal service activity at the national level has been associated with his role as secretary of the Composite Construction Committee of the American Concrete Institute (ACI). He is active in several other committees within ACI, the American Society of Civil Engineers (ASCE) and EERI. Within the University, Professor Parra-Montesinos is director of the U-M Structures Laboratory, a large and busy lab that has three full-time technicians and serves six faculty members and their students. He actively serves as department advisor for the Earthquake Engineering Research Institute (EERI) student chapter, which organizes several student activities, including regular seminars with prominent earthquake researchers and engineers. He is faculty advisor for the U-M Student Steel Bridge Team (SBT), which has achieved national prominence under his leadership. The SBT ranked first out of 180 university teams in the 2003 national competition and has continued to rank highly since.

External Review:

Reviewer (A): "... the hallmark topic of Dr. Parra-Montesinos' current area of research is in the use of HPFRCCs in joint regions of reinforced concrete structures in seismic regions." "The amount of research funding that Dr. Parra-Montesinos has obtained to support his work has been tremendous. He has been involved as PI or co-PI in six grants supported by the National Science Foundation..." "The competition for these funds has been extremely competitive and to be a PI or co-PI on awards in two consecutive years is a powerful statement regarding the quality of his work. This is unparalleled by professors at any rank."

Reviewer (B): "Although it is rare for an assistant professor to serve on such a coordinating group, I believe that Dr. Parra-Montesinos is uniquely qualified for this task."

Reviewer (C): "Among his peers, Dr. Parra is distinguished by the range of his research interests in structural engineering. He is the only structural engineer of his generation who is credible in structural analysis/behavior of steel and concrete structures as well as in those aspects of material knowledge that

impact structures.” “I have tried but was unsuccessful to point to someone else who would run a close second to him.”

Reviewer (D): “Dr. Parra-Montesinos is a leader in this emerging area... ” “I see him as potentially the leader in this field in the international arena within a few years.”

Reviewer (E): “. . . recognized as a professional whose work must be taken seriously because of its high quality. Frankly, I cannot think of anyone’s work in North America, at a similar professional stage, as complete as Gustavo’s work.”

Reviewer (F): “I thus consider Dr. Parra-Montesinos to be... the leading faculty member [of his generation] in the innovative field of developing and using new cementitious materials in composite and hybrid construction subjected to earthquakes.”

Reviewer (G): “In summary, Gustavo is clearly one of the lead [sic] researchers and scholars in his field” “The University of Michigan is fortunate to have Gustavo on the faculty as his stature and commitment enhances the overall reputation of your department and the University.”

Summary of Recommendation: Assistant Professor Gustavo Parra-Montesinos has demonstrated outstanding capabilities in teaching, research and service. He has established himself as a world leader in structural engineering and infrastructure systems. He has procured continuous research funding and has published in the most prestigious refereed journals in several areas. He is a dedicated teacher and student mentor and has become a leader—both in his profession and in the CEE Department. It is with the support of the College of Engineering Executive Committee that I recommend him for promotion to associate professor of civil and environmental engineering, with tenure, Department of Civil and Environmental Engineering, College of Engineering.



Ronald Gibala  
Interim Dean, College of Engineering

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