Approved by the Regents
May 17, 2007

PROMOTION RECOMMENDATION
The University of Michigan
College of Engineering

Russell Green, assistant professor of civil and environmental engineering, Department of Civil Engineering, College of Engineering, is recommended for promotion to associate professor of civil and environmental engineering, with tenure, Department of Civil Engineering, College of Engineering.

Academic Degrees:

Ph.D.	2001	Virginia Polytechnic Institute and State University, Civil Engineering, Blacksburg, VA
M.S.	1994	University of Illinois, Civil Engineering, Urbana-Champaign, IL
B.S.	1992	Rensselaer Polytechnic Institute, Civil Engineering, Troy, NY

Professional Record:

2001 – present	Assistant Professor, Department of Civil and Environmental Engineering, University of Michigan
1998 – 2001	Research Assistant, Virginia Tech
1992 – 1997	Earthquake Engineer, U.S. Defense Nuclear Facilities Safety Board
1994 – 1995	Research Engineer, U.S. Army Engineer Waterways Experiment Station
1993 – 1994	Research Assistant, University of Illinois at Urbana-Champaign

Summary of Evaluation:

Teaching: Professor Green's teaching record is very strong. His Q1 and Q2 averages are 4.6 and 4.8 respectively in both graduate and undergraduate courses. Of the four graduate courses he regularly teaches, two were newly introduced at Michigan: CEE 540 *Advanced Engineering Properties of Soils* and CEE 548 *Geotechnical Earthquake Engineering*. A third course, CEE 542 *Soil and Site Improvement* has been completely revised. Professor Green has mentored 12 BS and MS students. Five of them have been in the UROP program and another three were Marian Sarah Parker scholars. Eight of these BS and MS students have been co-authors on papers with him. More than half of the undergraduate students Professor Green has mentored have been underrepresented students with nearly all of them going on to pursue MS and PhD degrees either at Michigan or at other peer institutions. Professor Green is currently advising five PhD students at Michigan and has co-advised an additional student at the University of Rhode Island. The students in the CEE Department describe Professor Green as a devoted, hard working, passionate and compassionate teacher and mentor, and have expressed their appreciation of his efforts by choosing him as the 2005-2006 ASCE Professor of the Year. Recognition has also come from CEE faculty which has nominated Professor Green for the 2005-2006 James M. Robbins Excellence in Teaching Award from the Great Lakes District of the Chi Epsilon Civil Engineering Honor Society.

Research: The quality of Professor Green's research has been excellent. Ten external reviewers uniformly praised the high quality of Professor Green's research and his prominence in the field of geotechnical earthquake engineering. They took particular note of the extremely high quality of Professor Green's publications, several of which will alter the earthquake engineering discipline, and therefore society, in profound ways. Professor Green has conducted pioneering research on several fronts including: seismicity of the central and eastern United States; post-liquefaction aging of soils; paleo-liquefaction; and analytical studies of equivalent cycles of ground shaking for seismic hazard analysis. He has successfully procured funding from the National Science Foundation for laboratory and field studies of soil aging and is expecting official notification of an NSF-CAREER award for paleo-liquefaction research in the Midwest. He has built an excellent research group with strong recruits into the

geotechnical engineering doctoral program. His work has been published in the top journals for geotechnical engineering and seismology. He has been invited to present his work at professional conferences and workshops. His publications have attracted major interest and acclaim in the civil engineering profession as they appear to be revealing a need for reassessment of the seismic hazard in the eastern US as well as the procedures that are presently used to estimate the equivalent number of cycles of ground shaking. Professor Green's research has also taken on an international flavor. His PhD students and he are the first US researchers to participate in the evaluation of the earthworks in one of the largest civil engineering projects in history - the spectacular construction of the artificial "Palm" islands off the coast of Dubai.

Recent and Significant Publications:

Bradshaw, A.S., Baxter, C.D.P., and Green, R.A. (2007). "A Site-Specific Comparison of Simplified Procedures for Evaluating Cyclic Resistance of Non-Plastic Silt", Proc. GeoDenver 2007, ASCE Geotechnical Special Publication XXX, (*in press*).

Cameron, W.I. and Green, R.A. (2006). "Spectral Scaling Factors for CEUS and WUS Horizontal Ground Motions", *Bulletin of the Seismological Society of America*, (*in press*).

Green, R.A., Gunberg, K., Parrish, K., and Munger, T. (2006). "A Simple Uniform Hazard Design Spectral Shape for Building Code Rock Motions", *Seismological Research Letters*, (*in press*).

Green, R.A. and Michalowski, R.L. (2006). "Shear Band Formation behind Retaining Structures Subjected to Seismic Excitation", *Foundations of Civil and Environmental Engineering*, 7: 157-169.

Green, R.A. and Lee, J. (2006). "Computation of Number of Equivalent Strain Cycles: A Theoretical Framework", *Geomechanics II: Testing, Modeling, and Simulation* (P.V. Lade and T. Nakai, eds.), ASCE Geotechnical Special Publication 156: 471-487.

Green, R.A. and Terri, G.A. (2005). "Computation of Number of Equivalent Cycles for Cyclic Liquefaction Evaluation", *Geomechanics: Testing, Modeling, and Simulation*, ASCE Geotechnical Special Publication 143 (J.A. Yamamura and J. Koseki, eds.): 544-566.

Olson, S.M., Green, R.A., and Obermeier, S.F. (2005). "Revised Magnitude Bound Relation for the Wabash Valley Seismic Zone of the Central United States", *Seismological Research Letters*, 76(6): 756-771.

Green, R.A. and Terri, G.A. (2005). "Number of Equivalent Cycles Concept for Liquefaction Evaluations - Revisited", *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, 131(4): 477-488.

Service: Professor Green has made significant contributions to service. He has served on the CEE Curriculum and Research Committees, and on the CEE Information Technology Committee. At the college and university levels, Professor Green served on the Terrorist Threat Assessment Committee for the Ford Nuclear Reactor and is serving on the Decommissioning Review Committee for the FNR. Professor Green took the lead in performing the blast analysis and consequence assessment of the Ford Nuclear Reactor. At the professional level, Professor Green serves on the American Society of Civil Engineers, Geo-Institute Soil Improvement Committee. He is also the secretary on the Board of Governors (a national elected position) of the US Universities Council on Geotechnical Education and Research (USUCGER).

External Reviewers:

Reviewer (A): "Dr. Green has the rare quality of being extremely meticulous in his research and teaching. ...he puts incredible time and effort into fully exercising and scrutinizing methodologies proposed by others. This is a talent that ... earns him respect from his peers."

Reviewer (B): "Dr. Green is one of the bright stars in geotechnical engineering, and he has rapidly become a leader in his peer group. Professor Green is definitely worthy of being advanced in rank to the position of Associate Professor."

Reviewer (C): "His papers are not just 'run-of-the-mill'. ...[They] are written ... on topics of immense importance to Midwest society and our infrastructure. This work is out-front... ...I rank him at or near the top of [his cohort]. ...were I still department head, I would be trying to recruit Russell to join our faculty. Eventually I suspect that may happen. [Russell does] meet requirements at [my institution] [for promotion and tenure] without any doubts what-so-ever! My prediction is that he will experience a brilliant career..."

Reviewer (D): "[His] selection to serve on the MAG [Modeling Assessment Group of the Defense Treat Reduction Agency] is indicative of his national recognition. Based on my 15 years of experience as department chair, I believe Dr. Green has met and exceeded expectations for promotion and tenure."

Reviewer (E): "Dr. Green is one of the best ... people working in the field of geotechnical earthquake engineering today, and the University of Michigan is fortunate to have him on its faculty. [His] work will ultimately change the way we evaluate and mitigate the risk of [earthquake-induced] liquefaction. ...I have evaluated dozens of tenure promotion packages from top engineering schools around the country... ...Dr. Green's achievements and service are as significant as or more significant than all those that were granted tenure. ...the upward trajectory of Dr. Green's career is steeper than all those that were granted tenure."

Reviewer (F): "...[Dr. Green's work] will lead to changes in building practices. ...the quality of his work is second to none... ...his work is consistently above that of his peers."

Reviewer (G): "...Russell Green has demonstrated a command of research and produced scholarly publications that excel in relation to others of comparable experience in his field."

Summary of Recommendation: Professor Russell Green has demonstrated excellence in all of his scholarly endeavors. He has achieved national and international recognition for his innovative research in the area of geotechnical earthquake engineering. He is also clearly among the top educators in the College of Engineering and the University of Michigan. It is with the support of the College of Engineering Executive Committee that I recommend Russell A. Green for promotion to associate professor of civil and environmental engineering, with tenure, Department of Civil and Environmental Engineering, College of Engineering.

David C. Munson, Jr.
Robert J. Vlasic Dean of Engineering
College of Engineering

May 2007