Approved by the Regents
May 17, 2007

PROMOTION RECOMMENDATION
The University of Michigan
College of Literature, Science, and the Arts

Todd A. Ehlers, assistant professor of geological sciences, College of Literature, Science, and the Arts, is recommended for promotion to associate professor of geological sciences, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	2001	University of Utah
M.S.	1997	University of Utah
M.S.	1996	University of Utah
B.S.	1993	Calvin College

Professional Record:

2003 – present	Assistant Professor and Edman Faculty Fellow, Department of Geological Sciences, University of Michigan
2001 – 2002	Postdoctoral Fellow in Geology, California Institute of Technology
2001	Postdoctoral Researcher, University of Washington

Summary of Evaluation:

Teaching – Professor Ehlers is a dedicated and skilled instructor who has taught a wide variety of courses at all levels. Student evaluations are uniformly high. He is also important to the program at Camp Davis and has proven himself to be an excellent field instructor. He emphasizes quantitative techniques in his courses, which is essential to a modern geoscience education. Professor Ehlers has expressed a strong interest in developing large enrollment, interdisciplinary courses for non-majors. It is rare that a junior faculty member expresses a specific interest in teaching non-majors.

Research – Professor Ehlers' research focuses on the development of quantitative models of landscape evolution and the breadth of his scientific approach is unique. He is recognized as a leader in combining advanced analytical techniques with the analysis of large-scale tectonic events. He has a strong publication record with fourteen peer-reviewed publications since 2003. These papers appear in the very best journals: *Nature*, *Science*, *Earth and Planetary Science Letters*, and *Geology*, among others. He was co-editor and contributing author to a special volume of *Reviews in Mineralogy and Geochemistry* on low-temperature thermochronology. He is well funded by the National Science Foundation and has a productive cadre of four Ph.D. candidates, some of whom are among our very best geology graduate students.

Recent and Significant Publications:

"Where does sediment come from? Quantifying catchment erosion with detrital apatite (U-Th)/He thermochronometry," with G. M. Stock and K. A. Farley, *Geology*, 34, 2006, pp. 725-728.

"Eocene to recent variations in erosion across the central Andean fold-thrust-belt, northern Bolivia: Implications for plateau evolution," with J. A. Barnes, et al., *Earth and Planetary Science Letters*, 248, 2006, pp. 118-133.

Low-Temperature Thermochronology: Techniques, Interpretations, and Applications, co-edited with P. R. Reiners, Mineralogical Society of America, *Reviews in Mineralogy and Geochemistry, Volume 58*, Washington, D. C., 2005.

"Rapid glacial erosion at 1.8 Ma revealed by $^{4}He/^{3}He$ thermochronometry, *Science*, 310, 2005, pp. 1668-1670.

Service – Professor Ehlers has been an active citizen, serving on two search committees and the graduate admissions committee. As a colleague on committees, his service is thoughtful and constructive, and he can always be counted on to shoulder additional responsibilities. Nationally, he is an associate editor for *Tectonics* and was recently appointed editor for *Earth Science Reviews*. He was also guest editor for two issues of *Earth Surface Processes and Landforms* and has served on a National Science Foundation panel.

External Reviews:

Reviewer (A)

"To my knowledge Todd is the most visible expert in his field of expertise and in his class of age. ... The avenue of future research that he outlines in his statement, exploring the effect of climate change and tectonics on the landscape and erosion, is heading toward the right direction given current trends in geology and his own skills. I think Todd has a huge potential to contribute to major advances along that line and I am confident that he will be successful..."

Reviewer (B)

"...Ehlers is unusual in his ability to synthesize across disciplines, to integrate diverse data sets, and to build numerical models that assess data and predictions. As such, he will attain insights the [sic] elude others. His strong publication record, his thorough approach to research, and his clarity of expression guarantee that his work will have high visibility across the coming years and that his stature will continue to amplify."

Reviewer (C)

"Todd is developing analytical methods to enable us to extract erosional and tectonic histories of mountain systems. He has quickly established himself as a leader in this crucial enterprise and directed his skills at fundamental earth science questions, questions that, indeed, seem central to a geoscience department. I am also impressed that as a scientist [of his generation] he is writing authoritative review articles and taking a leading role in publications and meetings in his discipline."

Reviewer (D)

"...yes – Ehlers deserves tenure. He has set up an innovative research program, has made important scientific contributions as an independent scientist, and will continue to do so for the foreseeable future. ... While others have been working on similar modeling...Todd has a much more realistic view of data, and does a much better job at communicating the modeling results back to the community that makes measurements. This is an essential skill, and one that will allow him to continue to make a mark on the field for a long time to come. ... In many ways he has become the 'go-to guy' for quantitative interpretation of thermochronometric data."

Reviewer (E)
"...Todd is a well-regarded and influential thermal modeler. ... I have no doubt that his reputation and impact on the science will continue to grow... He is a great graduate mentor, and your graduate program is better for his presence at the University of Michigan."

Reviewer (F)
"Among those papers [that were sent to me], three are major studies that have advanced geomorphology as much as most that I have read in the past ~10 years."

Reviewer (G)
"Ehlers has the necessary scientific stature, breadth, and character to fill a permanent position at a major university. His curriculum vitae and research activities to date clearly demonstrate that he is highly talented, independent, self-motivated, and goal-oriented. Ehlers' research is thorough, innovative and thought provoking, and over the last years he has developed exciting concepts for projects that integrate geomorphic, thermochronologic, and structural studies at the scale of orogens as well as smaller subsets of tectonically active landscapes."

Reviewer (H)
"...Dr. Ehlers is clearly an active contributor to the development of the field by organizing symposia and workshops in national and international meetings. ... The candidate's publications are all solid contributions. I find his writing very clear and articulate... ... it is quite unusual for someone [of his generation] to write review papers. This reflects the respect his peers hold."

Summary of Recommendation:
Professor Ehlers has satisfied every requirement for tenure – teaching, research, and service – at a high level. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Assistant Professor Todd A. Ehlers be promoted to the rank of associate professor of geological sciences, with tenure, in the College of Literature, Science, and the Arts.

Terrence J. McDonald
Arthur F. Thurnau Professor,
Professor of History, and Dean
College of Literature, Science, and the Arts

May 2007