Approved by the Regents
May 19, 2011

PROMOTION RECOMMENDATION
The University of Michigan
School of Kinesiology

Daniel P. Ferris, associate professor of kinesiology, with tenure, School of Kinesiology, and associate professor of biomedical engineering, without tenure, Department of Biomedical Engineering, College of Engineering, is recommended for promotion to professor of kinesiology, with tenure, School of Kinesiology, and professor of biomedical engineering, without tenure, Department of Biomedical Engineering, College of Engineering.

Academic Degrees:

Ph.D.	1998	University of California, Human Biodynamics, Berkeley, CA
M.S.	1994	University of Miami, Exercise Physiology, Miami, FL
B.S.	1992	University of Central Florida, Mathematics Education, Orlando, FL

Professional Record:

2010 – present	Associate Dean for Research, School of Kinesiology, University of Michigan
2009 – present	Faculty Member, Bone and Joint Injury Prevention and Rehabilitation Center, University of Michigan
2007 – present	Adjunct Associate Professor, Department of Physical Medicine & Rehabilitation, University of Michigan Health System
2006 – present	Associate Professor, Department of Movement Science, School of Kinesiology, University of Michigan
2006 – present	Associate Professor, Department of Biomedical Engineering, College of Engineering, University of Michigan
2006 – present	Faculty Member, Neuroscience Graduate Program, University of Michigan
2008	Visiting Scholar, Institute for Neural Computation, University of California, San Diego
2006 – 2009	Graduate Chair, School of Kinesiology, University of Michigan
2005 – 2007	Adjunct Assistant Professor, Department of Physical Medicine & Rehabilitation, University of Michigan Health System
2001 – 2006	Assistant Professor, Department of Movement Science, School of Kinesiology, University of Michigan
2001 – 2006	Assistant Professor, Department of Biomedical Engineering, College of Engineering, University of Michigan
2000 – 2001	Post-Doctoral Fellow, Department of Electrical Engineering, College of Engineering, University of Washington
1998 – 2000	Post-Doctoral Fellow, Department of Neurology, University of California, Los Angeles
1997	Visiting Scholar, Division of Neurophysiology, Panum Institute, University of Copenhagen

Summary of Evaluation:

Teaching: Professor Ferris is an excellent educator, both inside and outside of the classroom. He has developed three new courses and revised two (a core biomechanics course and a course orienting graduate students to skills needed for academic success). His teaching has been rigorous and has integrated at various levels of difficulty mathematical, physical, and neurological principles of human movement. He has successfully used different approaches in individual courses ranging from problem-based learning to

application of popular comic book character (Batman) to motivate freshmen to study biomechanics. Student ratings have been uniformly high.

Professor Ferris is an outstanding mentor, he has matriculated seven doctoral students, four in Kinesiology and three in Biomedical Engineering since his arrival at the University of Michigan. Currently he is mentoring six additional doctoral students, two assistant professors in athletic training, one in physical medicine and rehabilitation, and three postdoctoral fellows. He has assisted most of his students in securing federal or university merit funding. In addition, he has worked with master students in carrying out research under his guidance along with 39 undergraduate students. Professor Ferris has served on 13 doctoral guidance committees, 23 qualifying examination committees, and 29 doctoral dissertation committees.

Research: Professor Ferris has shown a very impressive increase in scholarly productivity between 2006 and the present with publication numbers increasing from about three per year to 13 in 2009 and an additional five papers in 2010. His career total is 47 refereed publications with another two in press.

Professor Ferris has demonstrated the ability to strategically shift his research focus from extensive use of robotic exoskeletons as a tool for analysis of locomotor control in healthy individuals or for rehabilitation of individuals with spinal cord injury or stroke to the new line of research tracking of cortical activity by high-density electroencephalography (EEG) for the study of the neural control of locomotion.

Professor Ferris has displayed respectable success in securing research funding as a principal investigator from various sources including the R21 grant (2009-2010) from the NIH and a grant from the Army Research Laboratory (2009-2010). In collaboration with colleagues in ergonomics and biomedical engineering, Professor Ferris is a co-investigator on three grants, two from the Army (Research Laboratory 2010-2015 and Medical Research and Materiel Command, 2009-2014) and one from the Office of Naval Research (2008-2012). He is also a participant in an NIH-funded (T32) training grant through the University of Michigan Medical School (Physical Medicine and Rehabilitation).

Recent and Significant Publications:

Ferris DP, and Lewis CL. Robotic lower limb exoskeletons using proportional myoelectric control. *Conf Proc IEEE Eng Med Biol Soc* 2009: 2119-2124, 2009.

Gwin JT, Gramann K, Makeig S, and Ferris DP. Electrocortical activity is coupled to gait cyclephase during treadmill walking. *Neuroimage* in press: 2010a.

Kao PC, Lewis CL, and Ferris DP. Invariant ankle moment patterns when walking with and without a robotic ankle exoskeleton. *Journal of biomechanics* 43: 203-209, 2010a.

Huang HJ, and Ferris DP. Upper and lower limb muscle activation is bidirectionally and ipsilaterally coupled. *Medicine and Science in Sports and Exercise* 41: 1778-1789, 2009a.

Sawicki GS, Lewis CL, and Ferris DP. It pays to have a spring in your step. *Exercise and Sport Sciences Reviews* 37: 130-138, 2009.

Simon AM, Kelly BM, and Ferris DP. Sense of effort determines lower limb force production during dynamic movement in individuals with poststroke hemiparesis. *Neurorehabilitation and Neural Repair* 23: 811-818, 2009b.

Service: Professor Ferris performs extensive professional, University, and School service. He is a member of several professional organizations and has served on various committees within those organizations. He has reviewed grant applications for two private foundation, and five federal agencies (NIH, NSF, VA, USAMRMC, and Canadian NSERC). Professor Ferris has reviewed more than 100

manuscripts for 46 different journals spanning across kinesiology, biology, engineering, and medicine. He currently serves as an associate editor of two journals and as an editorial board member of a third.

In addition, Professor Ferris has served on several committees across campus as a representative of the School of Kinesiology. He has given 29 presentations at the University of Michigan on his research to various departments and programs. For doctoral students outside of Kinesiology that are not his advisees, he has served on 7 qualifying exam committees and 11 dissertation committees in addition to mentoring 39 undergraduate research assistants from six different departments in his laboratory.

Currently, Professor Ferris serves as the associate dean for research, having been appointed in 2010. He served on the Graduate Committee from 2002-2009 and chaired the committee from 2006-2009. He has continuously chaired faculty search committees and served on the School's executive committee. For Kinesiology graduate students that are not his advisees, Professor Ferris has supervised two doctoral student research rotations, served on six doctoral guidance committees, served on six doctoral qualifying exams, served on five doctoral dissertation committees, and served on one master's level thesis committee. He currently is an internal mentor for two junior faculty in Kinesiology.

External Reviewers:

Reviewer A: "He is a very well regarded member of the international biomechanics community. I highly recommend him for this promotion. Were he at our institution, I am confident he would be promoted to full professor."

Reviewer B: "... Dr. Ferris is well known among his colleagues and I would consider him to be in the top 10% of those scientists-engineers with the same general area of expertise related to human locomotion. He is recognized for his creativity in understanding the interface between device development and biology."

Reviewer C: "... I judge Dr. Ferris to be a highly active researcher, with a high quality, and in recent years also a high quantity output of scientific research. He has a national profile and an emerging international reputation, has solid, peer-reviewed funding and good professional service. I would like to submit to the promotions committee that Dr. Dan Ferris be promoted to full professor."

Reviewer D: "I am extremely pleased to write this letter of evaluation in support of the promotion of Dr. Dan Ferris to Full Professor in the School of Kinesiology at the University of Michigan. Dr. Ferris is a leading scholar in the research of human movement with a very strong international reputation. He has pursued a varied set of research topics that all place him at the cutting edge of research applied to understanding human motor control. He has been at the forefront of applying technology to answer basic questions in motor control. His research program has made a tremendous contribution to our understanding of neuromotor and biomechanical mechanisms of normal and pathological movement. He has achieved the status of being an international leader in this field."

Reviewer E: "I was particularly impressed by his success in mentoring students for their own fellowships, which takes a lot of work and provides a huge impulse to their careers. From his key role in the projected expansion in rehabilitation robotics, it is obvious that Dr. Ferris is seen as a natural leader at the University of Michigan."

Reviewer F: "...Dan has established himself as a leader in his department and school, in his university, and in the scientific community at large. He is seen as an innovative investigator in the field of human locomotion, both in intact subjects and in spinal cord injured persons as well."

Summary of Recommendation: Professor Ferris has accomplished a great deal in terms of scholarship, publications, teaching, mentoring of graduate students, and securing of research funding. He is a national and international leader who contributes both in external and internal service and is recognized as one of the top researchers in his field. It is with the support at all levels of review, departmental, school, and executive committees, within the School of Kinesiology and the College of Engineering, that we recommend Professor Daniel P. Ferris for promotion to professor of kinesiology, with tenure, School of Kinesiology, and professor of biomedical engineering, without tenure, College of Engineering.

R F Zernicke

Ronald F. Zernicke
Dean, School of Kinesiology

David C. Munson Jr.

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

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