Approved by the Regents
May 14, 2009

PROMOTION RECOMMENDATION
UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF PATHOLOGY

Laurie K. McCauley, D.D.S., Ph.D., associate professor of pathology, without tenure, Department of Pathology, Medical School, is recommended for promotion to professor of pathology, without tenure, Department of Pathology, Medical School [also professor of periodontics and oral medicine, with tenure, School of Dentistry].

Academic Degrees:

Ph.D.	1991	The Ohio State University
M.S.	1988	The Ohio State University
D.D.S.	1985	The Ohio State University
B.S.	1980	The Ohio State University

Professional Record:

2002-present	Associate Professor of Pathology, University of Michigan
2001-present	Professor of Periodontics and Oral Medicine, University of Michigan
1996–2001	Associate Professor of Periodontics/Prevention/Geriatrics, University of Michigan
1992–1996	Assistant Professor of Periodontics/Prevention/Geriatrics, University of Michigan

Summary of Evaluation:

Teaching: Dr. McCauley has had diverse teaching responsibilities predominantly in the Dental School which have involved both basic science and clinical course work which include lectures and laboratory courses, training in the research laboratory and one-on-one training in the dental clinic. She has participated in the medical student curriculum course on the normal cell. She has directed a graduate course in mineralized tissue for the past five years. She has had extensive teaching of individual students which includes serving on twenty dissertation committees, not just in the Dental School but also elsewhere in the University including Pharmacology, Laboratory Animal Medicine, Veterinary Pathology, Orthopedics and Engineering, and she has also served on dissertation committees at other institutions including The Ohio State University, Michigan State University, The State University of New York at Syracuse and Hacettepp University in Turkey. Her educational presentations are regarded as well-organized and clear and she is considered to be an excellent communicator.

Research: Dr. McCauley has made great contributions to the study of hormonal controls of bone and therapeutic mechanisms of the action of parathyroid hormone for the regeneration of osseous defects and the pathogenesis of prostate cancer skeletal metastases. Her research utilizes cellular, molecular and translational approaches with a heavy emphasis on animal models of disease. Her research is focused on the mechanisms whereby PTH stimulated bone formation when administered daily, rather than continuously to rodents and humans. She has made seminal contributions from studies on the mechanisms of actions of PTH and its signaling through its receptor, showing that TGF beta regulates PTH/PTHrP receptor expression, that PTH and PTHrP regulated c-fos and Fra-2 expression in osteoblasts to increase proliferation and unexpectedly that osteoblastic cells mediate the anabolic affect of PTH. Such studies brought attention to the possibility that drugs designed to inhibit osteoclastic resorption might adversely affect bone formation. She has also made significant contributions to understanding how prostate cancer cells stimulate bone formation through PTHrP. Her work has been continually funded from the NIH. Currently she is the principal investigator on an RO1 for anabolic mechanisms of PTH action in bone, and she is also the principal investigator of an R21 on the integral role of hematopoietic cells in PTH actions on bone. She currently lists close to 90 publications in peer-reviewed journals such as Cancer Research, International Journal of Cancer, Stem Cells, Bone, Neoplasia and Nature Medicine. She has been invited to present her work at numerous venues in the United States including the Prout's Neck Meeting on Prostate Cancer in Maine, Emory University, University of Alabama Birmingham, University of Connecticut, The American Association for Dental Research and the American Society for Bone and Mineral Research. She has also been invited to present at institutions in South Korea, France, Thailand and China.

Recent and Significant Publications:

Yamashita J, Datta NS, Chun YP, Yang DY, Carey AA, Kreider JM, Goldstein SA, McCauley LK: Role of Bcl2 in osteoclastogenesis and PTH anabolic actions in bone. *Journal of Bone and Mineral Research* 23(5):621-32, 2008.

Pettway GJ, Meganck JA, Koh AJ, Keller ET, Goldstein SA, McCauley LK: Parathyroid hormone mediates bone growth through the regulation of osteoblast proliferation and differentiation. *Bone* 42:806-18, 2008.

Datta NS, Pettway GJ, Chen C, Koh AJ, McCauley LK: Cyclin D1 as a target for the proliferative effects of PTH and PTHrP in early osteoblastic cells. *Journal of Bone and Mineral Research* 22:951-64, 2007.

Koh AJ, Demiralp B, Neiva K, Hooten J., Nohutcu RM, Shim H, Datta NS, Taichman RS, McCauley LK: Cells of the osteoclast lineage as mediators of the anabolic actions of parathyroid hormone in bone. *Endocrinology* 146:4584-4596, 2005.

Chen C, Koh AJ, Datta NS, Zhang J, Keller ET, Xiao G, Franceschi RT, D'Silva NJ, McCauley LK: Impact of the mitogen-activated protein kinase pathway on parathyroid hormone-related protein actions in osteoblasts. *J Biological Chemistry* 279:29121-29129, 2004.

Service: Dr. McCauley has been active in the American Society for Bone and Mineral Research including being a member of the Editorial Board and now the associate editor of its journal, *Journal of Bone and Mineral Research.* She has also been an assistant editor of the Primer on the Metabolic Bone Diseases and Disorders of Mineral Metabolism for that organization. She has been a member of several NIH studies sections as well as being a site visitor and a scientific reviewer for other sections. She was a member of the Editorial Board of the journal *Calcified Tissue International* and is currently an editorial board member of Oral Diseases. In addition, she has been an ad-hoc reviewer for a number of other prestigious journals including the *American Journal of Physiology, Journal of Biological Chemistry, The American Journal of Pathology* and the *Journal of Proteomics Research.* She is currently the chair of the Department of Periodontics and Oral Medicine and has a named professorship, the William K and Mary Anne Najjar Professor of Periodontics in the Medical School. She has served her school with distinction as a member of the Dental Faculty Associates PAC Committee, the International Affairs Committee, the Research Cores and Facilities Advisory Group and a member of the Chairs Committee. She has also served her institution by being and Executive Group Member of the NASA Project of the University of Michigan Biomedical Engineering Program, the Internal Review Committee to evaluate the College of Engineering, the Pepper Center Operations Committee of the Institute of Gerontology and the University of Michigan Conflict of Interest Review Committee from the Office of the Vice President for Research. At the national level, she is on the External Advisory Board for the Center of Metabolic Bone Disease at the University of Alabama at Birmingham and a Counsel Member of the National Advisory Dental and Craniofacial Research Council from the National Institute of Health. Internationally she has been first vice-president and then president-elect and then president of the International Association for Dental Research, the Mineralized Tissues Section. It is clear that Dr. McCauley has been a great support to her profession, locally, regionally, nationally and internationally and to her department, her school and her university.

External Review:

Reviewer A: "Laurie has made outstanding service contributions to our field as a member of the ABMR Scientific Review committees, ASBMR council, NIH and other study sections, and as President of the Mineralized Tissues Section of the International Association for Dental Research, a member of several Editorial Boards, including Associate Editor of the JBMR. She has made outstanding contributions to these organizations at a level that is higher than average for someone at her level in her career, which speaks to her commitment to the scientific community and teaching. She is also a strong advocate for women in science and a fine example of someone who has achieved a much higher than average level of achievement in her field."

Reviewer B: "Dr. McCauley's scholarly and professional niche is unique and diverse. I know of no one else who has attained international prominence in three different areas: mechanisms of PTH and PTHrP actions on bone, mechanisms of prostate cancer metastases to bone and metabolic bone disease and impact on the oral cavity. Collectively, her background, training, clinical and research experience lead me to her rank [sic] in the top 1% of her peers. She is a top recruit to serve as Dean for several prestigious University Dental Schools."

Reviewer C: "There is no question that she would be named in the top ten investigators in the world in the area of PTH cellular mechanisms of action."

Reviewer D: "She has trained numerous post-docs that have succeeded in academia....She is a natural born leader and knows how to build consensus and support. She has a vision and capacity to project long term planning."

Reviewer E: "Dr. McCauley's international reputation is demonstrated by a variety of appointed and elected roles. She has served twice on NIH study sections. She was elected in 2007 to the Council of the American Society for Bone and Mineral Research, the leading scientific organization in our field, and has recently been appointed as an Associate Editor of the most highly-ranked journal in our field, the *Journal of Bone and Mineral Research*, having previously served on its and several other editorial boards."

Reviewer F: "The respect for McCauley's science is underscored by her ubiquitous presence as an invited speaker at major meetings. But most importantly, she is an outstanding mentor of academic dentists and bone cell biologists. In sum, McCauley enjoys great stature in our field and we would be pleased to have her as a leading member of our bone program. I am confident she would be appointed Professor in our department."

Summary of Recommendation:

Laurie K. McCauley, D.D.S., Ph.D., is an internationally renowned investigator in the field of bone metabolism, especially in relation to parathyroid hormone and PTHrP and how these affect osteoblasts and osteoclasts in terms of their function and differentiation. Her work has been continually funded at high levels from external sources, predominantly the NIH. She has participated in several medical school activities, including some basic courses and teaching in the Institute for Gerontology, and she has served her department well as chair, and the University of Michigan by active participation in a number of important committees. She is also an enthusiastic teacher who lectures, runs laboratory sessions, directs seminars and teaches graduate students and postdoctoral students. She is certainly deserving of this promotion to professor in the Department of Pathology.

James O. Woolliscroft, M.D.
Dean
Lyle C. Roll Professor of Medicine

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