

PROMOTION RECOMMENDATION
UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF RADIOLOGY
DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY

Approved by the Regents
May 20, 2010

Gary D. Luker, M.D., assistant professor of radiology, Department of Radiology, and assistant professor of microbiology and immunology, Department of Microbiology and Immunology, Medical School, is recommended for promotion to associate professor of radiology, with tenure, Department of Radiology, and associate professor of microbiology and immunology, without tenure, Department of Microbiology and Immunology, Medical School.

Academic Degrees:

M.D.	1991	Washington University, St. Louis, MO
B.S.	1987	University of Evansville

Professional Record:

2004-present	Assistant Professor of Radiology and Assistant Professor Microbiology and Immunology, University of Michigan
2002-2004	Assistant Professor, Mallinckrodt Institute of Radiology
1996-2002	Instructor of Radiology, Mallinckrodt Institute of Radiology

Summary of Evaluation:

Teaching: Dr. Luker participates in all aspects of the radiology teaching program. He provides formal lectures in rotation with other faculty in pediatric radiology and on-the-job training on the clinical service for medical students, radiology residents, and fellows in pediatric radiology. In addition, he participates in research instruction for graduate students and postdoctoral fellows and participates in graduate student dissertation committee meetings. The quality of Dr. Luker's teaching is very good. His teaching evaluations over the past three years have ranged from the first to the last quartile. This is likely due to his limited contact with radiology residents due to the large amount of funded research he performs. Individual comments from resident evaluations are positive. Evaluations of Dr. Luker's teaching in the laboratory are more consistent. Both group and individual evaluations are available for Dr. Luker's laboratory teachings. He is rated by the students taking Microbiology 500 as above the mean (overall evaluation). Individual letters from postdocs and graduate students have been laudatory.

Research: Dr. Luker is a physician scientist whose research is within the Molecular Imaging Center of the Department of Radiology. His laboratory is one of the leading laboratories in

molecular imaging of signal transduction pathways in intact cells and living animals. He has identified functions for chemokine receptors CXCR4 and CXCR7 in both regulation of primary tumor growth and progression to metastatic disease. We expect that these pathways and molecules will become biomarkers for response to therapy and can be used to direct therapeutic targets. Dr. Luker's laboratory is working to develop imaging assays that can be used for quantitative analysis of the interaction among multiple cell types in microenvironments of the primary tumor, the intravascular compartments and the site of metastatic disease. The quality of Dr. Luker's research is demonstrated by his peer-reviewed publications and his external funding. His 56 scientific publications are in high quality journals and he is currently funded on six different grants including two NIH R01 grants in which he is the principal investigator.

Recent and Significant Publications:

Luker K, Gupta M, Luker G: Imaging chemokine receptor dimerization with firefly luciferase complementation. *FASEB* 23:823-834, 2009.

Hutchens M, Luker K, Sottile P, Sonstein J, Lukacs G, Curtis J, Luker G: TLR3 increases disease morbidity and mortality from vaccinia infection. *Journal of Immunology* 180:483-491, 2008.

Luker K, Gupta M, Luker G: Imaging CXCR4 signaling with firefly luciferase complementation. *Anal Chem* 80:5565-5573, 2008.

Eliane JP, Repollet M, Luker K, Brown M, Rae J, Dontu G, Schott A, Wicha M, Doyle G, Hayes D, Luker G: Monitoring serial changes in circulating human breast cancer cells in murine xenograft models. *Cancer Res* 68:5529-5532, 2008.

Smith M, Luker K, Garbow J, Prior J, Jackson E, Piwnica-Worms D, Luker G: CXCR4 regulates growth of both primary and metastatic breast cancer. *Cancer Research* 64:8604-8612, 2004.

Service: Dr. Luker is a well trained diagnostic radiologist with fellowship training in pediatric radiology. His clinical assignments are all within the division of pediatric radiology. Dr. Luker provides service on both a local and national level. Within the Department of Radiology, Dr. Luker is a member of the Resident Selection Committee. He is the point person for applicants interested in careers in radiology research. On a national level, he serves in a variety of roles. He is a member of the Molecular Imaging Advocacy Committee and the Optical Imaging Committee of SNM (formerly the Society of Nuclear Medicine). He is a member of the Molecular Imaging Committee of the Radiological Society of North America and served as a RSNA member of the Molecular Imaging Conjoint committee with the American Society of Radiation Oncology on educational initiatives. He serves the National Institutes of Health as a study section member of the Center for Scientific Review and is a member of the Scientific Steering Committee for the National Institutes of Allergy and Infectious Disease.

External Review:

Reviewer A: "Dr. Luker has a strong vision for moving the field of radiology in new directions to benefit diagnosis, treatment, and quality of life for patients...In addition to his leadership service to many other scientific societies, Dr. Luker's expertise is nationally recognized, as evidenced by his appointment to serve on the NIH Medical Imaging review panel...Dr. Luker's ability to work well with academic and corporate collaborators ensures that the advances made in his laboratory can be rapidly and efficiently translated to application in patients...Dr. Luker ranks in the top 5% of his peers."

Reviewer B: "Gary is a recognized authority and leader in the new field of infectious disease imaging. Thanks in large part to his efforts, bioluminescence is increasingly being used to obtain a continuous picture of viral infection in living animals."

Reviewer C: "Dr. Luker is an extraordinary scientist who has significant contributions to several fields and who has a visibility and stature in the field that is unparalleled among his peers...Dr. Luker is one of the rising stars, nationally, and is making a broad impact on science...He has demonstrated time and time again that he can drive innovation in the field and set the tone on investigation on the national landscape...He is destined for a promising and exciting academic career that will have a significant impact in biomedicine."

Reviewer D: "Dr. Luker is an excellent teacher. He has trained several medical students, graduate and undergraduate students. He was an Education Director at Washington University Molecular Imaging Center. Currently, he teaches Microbiology as part of the University of Michigan medical school course. He has also given many lectures at various conferences including the Society of Nuclear Medicine Annual Meetings, NIH Biodefense Imaging Symposia, and the Society for Molecular Imaging Annual Meetings."

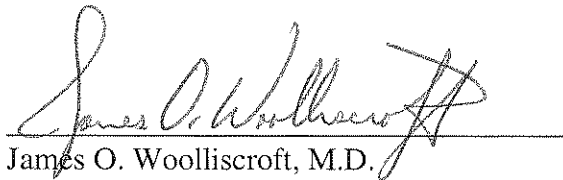
Reviewer E: "Dr. Luker is recognized as a very innovative researcher in the field of molecular imaging, which is evidenced by multiple invitations to present lectures at international conferences, symposia, and an invitation from other academic institutions. He has been actively involved in various committees in such prestige academic societies as the society for Molecular Imaging, Radiological Society of North America, and Society of Nuclear Medicine...These activities characterize Dr. Luker as an established scholar in the field of molecular imaging and diagnostic radiology."

Reviewer F: "He has performed some important work with respect to the behavior of chemokine receptors as well as their significance in cancer, particularly in metastatic disease. That, along with the fact that he has nearly 60 publications, has had NIH funding, including two current R01 grants as PI, has mentored a number of students and continues to serve in the clinic suggests to me that his promotion to associate professor is well-deserved."

Summary of Recommendation:

Gary D. Luker, M.D. is a well trained diagnostic radiologist with fellowship training in pediatric radiology. He does an excellent job on the clinical service and provides a vital link between our

research and clinical efforts. The majority of Dr. Luker's efforts are directed to his research in seeking imaging biomarkers to detect and monitor tumor progression. He has been successful in identifying functions for chemokine receptors CXCR4 and CXCR7 in the regulation of primary tumor growth and the progression of metastatic disease. He is making significant progress in his goal to identify the signal pathways that regulate progression of cancer from a primary tumor to metastatic disease. His progress is documented in his many peer-reviewed publications and is recognized by his invitations to serve on key committees in professional radiology organizations. The quality of his work and the promise of future success is also reflected in his excellent external funding, which includes three federal grants in which he is the principal investigator. As a physician scientist, Dr. Luker is critical to the success of efforts to translate laboratory advances into patient care regimens. I am pleased to recommend Gary D. Luker, M.D. for promotion to associate professor, with tenure, in the Department of Radiology, and associate professor, without tenure, in the Department of Microbiology and Immunology.

A handwritten signature in dark ink, appearing to read "James O. Woolliscroft", is written over a horizontal line.

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

May 2010