

PROMOTION RECOMMENDATION  
The University of Michigan  
School of Nursing

Janean E. Holden, associate professor of nursing, with tenure, School of Nursing, is recommended for promotion to professor of nursing, with tenure, School of Nursing.

Academic Degrees:

PhD	1993	University of Michigan, Nursing, Ann Arbor, MI
MSN	1987	University of Michigan, Nursing, Ann Arbor, MI
BSN	1974	University of Utah, Nursing, Salt Lake City, UT

Professional Record:

2009 – Present	Associate Professor, School of Nursing, University of Michigan
2008 – 2009	Research Investigator, School of Nursing, University of Michigan
2002 – 2008	Associate Professor, College of Nursing, University of Illinois at Chicago
1996 – 2002	Assistant Professor, College of Nursing, University of Illinois at Chicago
1993 – 1996	Post-Doc, College of Nursing, University of Illinois at Chicago

Summary of Evaluation:

Teaching: Professor Holden's teaching expertise lies primarily in the areas of physiology and pathophysiology. She currently teaches students at all three levels of curriculum including undergraduate, masters, and doctoral levels. In addition to her formal teaching assignment, Professor Holden has supervised a large number of undergraduate students in her laboratory, 15 students since 2008.

Professor Holden has been actively involved in doctoral education. She has chaired or co-chaired the dissertation committee for two doctoral students who completed their degrees and she currently chairs the dissertation committee for one student. Professor Holden has served as a member of nine dissertation committees to date. She was co-director on a T-32 application in 2010, "Cognition and Effective Functioning." In the role of co-director she contributed to the revision of the curriculum for the doctoral level program in biobehavioral nursing research. Professor Holden's doctoral students have been well funded due in large part to her mentoring with an ANF/MNRS research grant, Rackham research grant, MNRS/CANS dissertation research grant, and the University of Michigan, School of Nursing Investigator's Award. Professor Holden works closely with her students and is strongly invested in their growth and development as independent scientists. One reviewer notes, "[Professor Holden's] greatest teaching impact is related to her mentoring of graduate students in the roles of scholarship and professional development."

Research: Professor Holden is a consummate researcher who is highly committed to advancing pain science through bench research. Her program of research focuses on elucidating the role of the hypothalamus as part of the descending pain modulatory system in nociceptive (acute) and neuropathic (chronic) pain. Her work is crucial for nursing because it advances understanding of

chronic pain mechanisms and will eventually enable targeted therapy, both pharmacologic and non-pharmacologic. Her research is high quality as evidenced by her success with obtaining and sustaining NIH funding. Her program of research is growing and it demonstrates a logical progression that bodes well for her future success. Professor Holden is one of very few 'bench' scientists in the school.

Professor Holden's research is outstanding from a methodological standpoint. Her strong background in research methodology has enabled her to elucidate mechanisms in areas that very few venture in the pain field, given the small size and complex structure of the brainstem. Professor Holden has identified several mechanisms of brainstem control of pain processing that are novel, and likely to be very important in allowing us to better understand why many pharmacological and non-pharmacological therapies may work for pain, as well as identifying novel mechanisms and neurotransmitters that could be probed in the future. The systems that she is studying are turning out to be critical in determining who will develop chronic pain, an important consideration for chronic pain clinical researchers.

Professor Holden publishes her research in well-respected journals, several with high impact factors. She has published nine papers in two years since coming to the School of Nursing.

Professor Holden has a reputation for excellence as a researcher. As noted by one reviewer who states that her research has "had a significant scholarly impact in the area of pain science" and has "provided novel information to move the field of pain science forward with respect to the possibility of targeting both alpha-1 and more conventional alpha-2 receptors for pain control." Professor Holden's expertise as a nursing scientist is recognized by her appointment to the NIH/CSR Nursing Science in Adults and Older Adults (2009-2010) and the Nursing and Related Clinical Sciences Study Sections (2010-2014) as a regular member. Her contributions to nursing are further recognized by her induction into the American Academy of Nursing (2009), which is considered one of the highest honors for nurses. She received a Senior Scientist Recognition Award from MNRS (2009) and was invited to compete for the Ehrlich Prize for Neuroscience in 2008. She was the first nurse to be awarded the Presidential Early Career Award for Scientists and Engineers (presented at the White House in 2000).

#### Recent and Significant Publications:

- Jeong, Y., Holden, J.E. "The role of spinal orexin-1 receptors in posterior hypothalamic modulation of neuropathic pain." *Neuroscience* 2009; 159: 1414-1421.
- Holden, J.E., Pizzi J.A. "Lateral hypothalamic-induced antinociception is mediated by a substance P connection with the rostral ventromedial medulla." *Brain Research* 2008, 1214: 40-49.
- Holden, J.E., Naleway E., Jeong, Y. "Stimulation of the lateral hypothalamus produces antinociception mediated by 5-HT<sub>1A</sub>, 5-HT<sub>1B</sub> and 5-HT<sub>3</sub> receptors in the rat spinal cord dorsal horn." *Neuroscience* 2005; 135: 1255-1268.
- Holden, J.E., Pizzi J.A. "The challenge of chronic pain." *Advanced Drug Delivery Reviews* 2003; 55: 935-948.
- Holden, J.E. Naleway, E. (2001). "Microinjection of carbachol in the lateral hypothalamus

produces opposing effects on nociception mediated by  $\alpha_1$ - and  $\alpha_2$ - adrenoceptors.”  
*Brain Research* 2001; 911: 27-36.

Service: Professor Holden has been a solid citizen of the University by serving on several school level committees. Since being appointed in the School of Nursing in 2009, Professor Holden has served on the Appointments, Promotion and Tenure Committee (APT), the Division of Acute, Critical and Long-Term Care Programs Advisory Group, and the School of Nursing Research Advisory Committee. She was chairperson of the School of Nursing Faculty in 2010. At the university level she recently accepted the opportunity to be a reviewer for Rackham Merit Fellowships.

Professor Holden’s contributions to the profession include grant reviews and manuscript reviews. She has been a leader in the Midwest Nursing Research Society (MNRS), the largest nursing research organization in the United States and served as vice president from 2006-2010. She also co-chaired the Physiology Research Interest Group and chaired the Local Host Committee. Professor Holden is a founding member of the MNRS Foundation Board of Directors and currently serves as the secretary-treasurer of the MNRS Foundation whose purpose is to raise money for research. Her leadership in MNRS has made a difference in the trajectory of the organization. Professor Holden serves the profession in other ways, most notably through her considerable volume of peer review. She currently serves as a regular member of the CSR/NIH NRCS study section. She regularly reviews for multiple journals including the *Journal of Pain*, *Brain Research*, *British Journal of Pharmacology*, *Canadian Journal of Pharmacology* and *Research in Nursing & Health*.

External Reviewers:

Reviewer A: “[Professor] Holden clearly has demonstrated training, knowledge, and command of the science of her chosen field of work.”

Reviewer B: “Her track record in research reflects accomplishments in obtaining both intramural and extramural funding. She has maintained continuous funding as a Principal Investigator... [and] has received extramural funding from the National Institutes [sic] of Nursing Research, the American Nurses Foundation, and Sigma Theta Tau International. This track record of funding by a nurse scientist for basic science research is laudatory.”

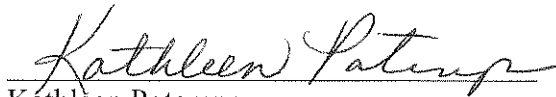
Reviewer C: “[Professor] Holden has built an excellent program of research. She has enhanced society’s understanding of many physiologic pathways which can assist with the care of patients. Her commitment to outstanding research demonstrates [Professor] Holden’s ability to fostering an environment of excellence at the University.”

Reviewer D: “[Professor] Holden’s writings are of the highest quality, of impressive quantity, are appropriately focused within her area of research expertise, and have had a significant scholarly impact in the area of pain science.”

Reviewer E: “[Professor] Holden has... had several publications... and has demonstrated the exemplar of publishing and dissemination of her work. She has conducted studies with animal

models that require several experiments within a study. Furthermore, her work uses anatomical and behavioral studies that have shown an in-depth gain of knowledge of substance P. This is very exciting and scientifically relevant information for the study of pain. There are few animal model scientists in the nursing field so it is difficult to compare to others in nursing; however her work is stellar and has been published in nursing and other interdisciplinary science journals. Her work has, and will continue to have, an impact in this area.”

Summary of Recommendation: In summary, Professor Holden is recognized as a highly a prominent and productive scientist who has made significant contributions to advancing pain science. She is successful as an independent researcher and as a key collaborator whose program of research focuses on elucidating the role of the hypothalamus as part of the descending pain modulatory system in acute and chronic pain. Her research is yielding a coherent body of work that is systematically informing science and advancing the understanding of chronic pain mechanisms that will eventually enable targeted therapy. Her work has achieved national and international notice. Professor Holden has a solid record of academic, professional and community service. She is an excellent teacher and mentor. It is with the support of the School of Nursing Executive Committee that I recommend Janean E. Holden for promotion to professor of nursing, with tenure, School of Nursing.



Kathleen Potempa  
Dean, School of Nursing

May 2012