

PROMOTION RECOMMENDATION  
THE UNIVERSITY OF MICHIGAN  
MEDICAL SCHOOL  
DEPARTMENT OF MOLECULAR AND INTEGRATIVE PHYSIOLOGY

Jun Hee Lee, Ph.D., assistant professor of molecular and integrative physiology, Department of Molecular and Integrative Physiology, Medical School, is recommended for promotion to associate professor of molecular and integrative physiology, with tenure, Department of Molecular and Integrative Physiology, Medical School [also being promoted to research associate professor, Institute of Gerontology].

Academic Degrees:

Ph.D.	2006	Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Republic of Korea
M.S.	2002	KAIST, Daejeon, Republic of Korea

Professional Record:

2011-present Assistant Professor of Molecular and Integrative Physiology, University of Michigan  
2011-present Research Assistant Professor, Institute of Gerontology, University of Michigan

Summary of Evaluation

Teaching: Dr. Lee is an exemplary teacher. He routinely lectures in several physiology courses. His classroom instruction is an extension of his research – consistent with his work on liver and colon pathophysiology, he teaches the digestive physiology courses DENT 640 Gastrointestinal System and Physiol 502 Human Physiology. Given his expertise in stress signaling and stress-associated pathophysiology, he has also developed the “Stress and Aging” session as a component of the Physiol 610 Pathophysiology and Translational Physiology course. Dr. Lee has served on three doctoral dissertation committees, and has mentored 12 undergraduate students, three master’s students, two Ph.D. students and four post-doctoral fellows. Two of his former fellows were highly successful while in his lab and both secured tenure-track faculty positions with his guidance. In addition, he has hosted two graduate student rotations, several medical student internships, two sabbatical faculty visits and up to 16 undergraduate research positions in his lab. He has demonstrated that he is fully devoted to training young scientists and promoting their careers.

Research: Dr. Lee’s research has led to several interesting discoveries related to the role of sestrins – a family of stress-inducible proteins. He and his lab have received national and international recognition as a leader in this field, and their work will likely have an impact on our understanding of the major public health issues facing our society such as obesity, aging and the importance of exercise. Dr. Lee has participated in and initiated numerous collaborations with a diverse group of experts within and outside the University of Michigan. His work at the University of Michigan has led to 12 original research articles as a corresponding author in various renowned journals including *Cell Metabolism*, *Nature Communications*, *PNAS*, *Autophagy* and *eLife*. In addition, he has published three co-authored articles, seven reviews/commentaries and two book chapters. Dr. Lee holds editorial board membership with the prestigious journal *Autophagy*, and performs peer review services for various journals and serves as an NIH study section ad hoc reviewer. Dr. Lee’s research projects have been supported by multiple grants NIH grants (R01 as PI, R21 as PI, R21 as co-PI, R01 as co-investigator)

and he was awarded several highly competitive foundation grants upon joining the UM (e.g., Ellison Medical Foundation, Liver Scholar Award, American Diabetes Association) that have helped him obtain sufficient preliminary results to secure the federal funding he currently has. He has received national and international honors and recognitions including early-stage from the above-mentioned foundation. For example, he was selected as a Pew Scholar in 2012, which he ended up having to turn down since he was also simultaneously selected as an Ellison New Scholar in Aging recipient.

#### Recent and Significant Publications:

Lee JH,\* \*\* Budanov AV,\* Talukdar S, Park EJ, Park HL, Park HW, Bandyopadhyay G, Li N, Aghajan M, Jang I, Wolfe AM, Perkins GA, Ellisman MH, Bier E, Scadeng M, Foretz M, Viollet B, Olefsky J, and Karin M.\*\*: Maintenance of metabolic homeostasis by Sestrin2 and Sestrin3. *Cell Metab* 16:311-321, 2012. [\* co-first authors, \*\*co-corresponding authors]

Ro SH, Nam M, Jang I, Park HW, Park H, Semple IA, Kim M, Kim JS, Park H, Einatd P, Damarid G, Golikovd M, Feinstein E, and Lee JH: Sestrin2 inhibits uncoupling protein 1 expression through suppressing reactive oxygen species. *Proc Natl Acad Sci USA* 111:7849-7854, 2014.

Park HW, Park H, Ro SH, Jang I, Semple IA, Kim DN, Kim M, Nam M, Zhang D, Yin L, Lee JH: Hepatoprotective role of Sestrin2 against chronic ER stress. *Nat Commun* 5:4233, 2014.

Park HW, Park H, Semple IA, Jang I, Ro SH, Kim M, Cazares VA, Stuenkel EL, Kim JJ, Kim JS, Lee JH: Pharmacological correction of obesity-induced autophagy arrest using calcium channel blockers. *Nat Commun* 5:4834, 2014.

Kim M,\* Sandford E,\* Gatica D, Qiu Y, Liu X, Zheng Y, Schulman BA, Xu J, Semple I, Ro SH, Kim B, Mavioglu RN, Tolun A, Jipa A, Takats S, Karpati M, Li JZ, Yapici Z, Juhasz G, Lee JH,\*\* Klionsky D. J,\*\* Burmeister M\*\*: Mutation in ATG5 reduces autophagy and leads to ataxia with developmental delay. *eLife*, 5:e12245, 2016. [\*, co-first authors; \*\*, co-corresponding authors]

Service: Since 2015, Dr. Lee has served on two departmental committees; the Molecular and Integrative Physiology (MIP) Graduate Committee and the MIP Seminar Committee. Within the MIP Graduate Committee, he is involved in arranging and directing educational activities for the Ph.D. students, and identifying and recruiting new Ph.D. students. Through the MIP Seminar Committee, he reviews and screens speaker candidates and assists with scheduling of the department seminars. In addition, he provides national and international level services in terms of reviewing journal papers and grant proposals.

#### External Reviewers:

Reviewer A: “Dr. Lee is known internationally for his studies on the identification and analysis of the Sestrin family of proteins... Dr. Lee’s level of scholarship is considered to be outstanding and the envy of most assistant professors around the country... His ability to span systems and methodologies and integrate multiple themes is exceptional. He writes well and organizes his thinking such that the stories he tells are compelling and inherently important.”

Reviewer B: “...Sestrin-family proteins have attracted the attention of many scientists from different disciplines, and Dr. Lee’s lab has become one of the leading groups in this rapidly emerging field... In addition to the Ellison Award, he received the AASLD Liver Scholar Award, ADA Basic Science

Award, NIH Pathway to Independence Award and designation as a Pew Scholar. This list is most impressive and likely not ever achieved by any other individual... He is a highly successful and innovative researcher with a national to international reputation in an important area of research with translational relevance. He is a rising star in the field, and has great potential to make even more significant research contributions in the future.”

Reviewer C: “It is striking that he has been able to initiate and be successful in pursuing so many different strands of research in such a short time frame. He has made successful use of both *Drosophila* and mammalian systems, and is able to switch between them, and generate findings with clinical implications. This augurs well for his future. Jun Hee has been extremely productive since his appointment, and has made a number of important advances in two fields, which have been published in top journals. In particular his work on the Sestrins has been at the forefront in what is a highly competitive, and to some extent controversial field...”

Reviewer D: “Within the past five years, he has published high-caliber research papers with national recognition, received national research funds, presented in scientific meetings, directed and taught in various courses, mentored graduate/undergraduate students and post-doctors, and actively participated in committee services. In every aspect as academician, Dr. Lee has demonstrated excellence deserving the promotion to Associate Professor with Tenure. Dr. Lee is most well recognized as a world leader in the field of Sestrin biology.”

Reviewer E: “Dr. Lee is a remarkable scientist [of his cohort] who has already established himself as an accomplished, creative, thoughtful and first rate basic biological scientist with interest in elucidating fundamental mechanisms that has major and far-reaching implications in human diseases like aging, diabetes, and neurodegeneration.”

Summary of Recommendation:

Dr. Lee is an outstanding scientist, collaborator, and teacher. His scholarly contributions are truly impressive as supported by his publication record and comments from the list of outside high profile reviewers. He has also been highly successful in securing federal and foundation grant support, in addition to receiving several career development awards and honors. Therefore, I am pleased to recommend Jun Hee Lee, Ph.D. for promotion to associate professor of molecular and integrative physiology, with tenure, Department of Molecular and Integrative Physiology, Medical School.



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Marschall S. Runge, M.D., Ph.D.  
Executive Vice President for Medical Affairs  
Dean, Medical School

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