

PROMOTION RECOMMENDATION

The University of Michigan

College of Pharmacy

Amanda L. Garner, associate professor of medicinal chemistry, with tenure, College of Pharmacy, is recommended for promotion to professor of medicinal chemistry, with tenure, College of Pharmacy.

Academic Degrees:

PhD	2008	University of Pittsburgh
BS	2003	Allegheny College

Professional Record:

2020 – Present	Associate Professor, Department of Medicinal Chemistry, University of Michigan
2013 – 2020	Assistant Professor, Department of Medicinal Chemistry, University of Michigan
2012 – 2013	Senior Research Associate, The Scripps Research Institute, La Jolla, CA
2010 – 2012	Research Associate, The Scripps Research Institute, La Jolla, CA

Summary of Evaluation:

Teaching: Professor Garner is a very dedicated, enthusiastic, and effective educator. She has done an excellent job teaching with outstanding student evaluations and lecture hours substantially greater than the department median for tenure-track faculty. Professor Garner is one of very few faculty who have taught in our B.S.P.S., Ph.D. and Pharm.D. programs. In her annual activity reports, Professor Garner has been very thoughtful and self-critical in her reflections on her teaching. She has consistently worked to improve her teaching, and this has clearly had positive impacts on student learning. As part of her role as the director of the Interdepartmental Graduate Program (IDP) in Medicinal Chemistry, Professor Garner has led a complete overhaul of our graduate curriculum, with the goal of streamlining the requirements, eliminating redundancy, incorporating new content while maintaining the rigor and breadth of medicinal chemistry training for our students. Her mentoring activities are extensive, and a philosophy of continual improvement drives Professor Garner's efforts. She has trained five post-doctoral fellows, 16 Ph.D. students, two M.S student, one Pharm.D. student, and six undergraduate students in her laboratory. Not only is she effective at mentorship in the laboratory, but she is very conscientious and proactive at promoting her mentees who have received numerous competitive awards and fellowships, including NIH- and NSF-supported graduate fellowships, ACS Division of Medicinal Chemistry Pre-doctoral Fellowships, and NIH T32 training grant slots. Several of them have also been selected to give invited presentations at conferences and symposia. Ten of her Ph.D. students have since graduated, moving on to positions at top academic and research institutions (current: MIT, University of Utah; former: Harvard, UCSF, UCSD, NIH) and industry (Merck, Eclipse Bioinnovations, Flagship Pioneering, WuXi STA, Sapient Therapeutics).

Research: Professor Garner is an outstanding scientist, with numerous research accomplishments. Her work focused on targeting RNA and RNA-protein interactions with small molecules, peptides and natural products. Her unique, innovative, and interdisciplinary approaches for creating new tools to control RNA translation are at the forefront of RNA processing and translation control in biomedical science. Her significant contributions have opened new areas of investigation in her field, and she is a rising star in chemical biology. Professor Garner has established herself as leader in this relatively new area of science as evidenced by the many grants and awards, she has received

(e.g., two Falk Medical Trust Catalyst Awards, the Robertson Award from ACS Division of Medicinal Chemistry, a Rogel Cancer Center Scholar Award and most recently, the Ono Pharma Foundation Breakthrough Science Award). These awards specifically recognize ground-breaking, innovative science. Professor Garner has also been very successful in obtaining peer-reviewed, extramural funding (e.g., four NIH R01 grants as the PI). Since her promotion to associate professor, Professor Garner has given 44 invited talks, published nine research papers (with two under review and three more in preparation), five review-type articles and one book chapter. This is an outstanding level of productivity. Professor Garner's expertise has also been sought after by biotech companies, venture capital firms and as a reviewer for national and international grant funding agencies. Professor Garner has been recognized internationally for her research expertise. She has reviewed grants for Genome Canada and for six years was a bi-annual reviewer for the Singapore Ministry of Education, Expert Panel on Chemistry and Chemical Engineering. Professor Garner was a keynote speaker at a Max Planck Society symposium in Germany and gave invited presentations in France and Taiwan in 2022. This is even more impressive due to the travel restrictions during the Covid pandemic.

Recent and Significant Publications:

- Lorenz, D. A.; Kaur, T.; Kerk, S. A.; Gallagher, E. E.; Sandoval, J. Garner, A. L. "Expansion of cat-ELCCA for the Discovery of Small Molecule Inhibitors of the Pre-let-7-Lin28 RNA-Protein Interaction." *ACS Med. Chem. Lett.* 2018, 9, 517-521.
- Mitchell, D. C.; Menon, A.; Garner, A. L. "Chemoproteomic Profiling Uncovers CDK4-Mediated Phosphorylation of the Translational Suppressor 4E-BP1." *Cell Chem. Biol.* 2019, 26, 980-990.
- Robertson, A. W.; Sandoval, J.; Mohamed, O. G.; Zhuang, Y.; Gallagher, E. E.; Schmidt, J. J.; Caratelli, L.; Menon, A.; Schultz, P. J.; Torrez, R. M.; Hay, C. L.; Bell, B. A.; Price, P. A.; Garner, A. L.; Tripathi, A. "Discovery of Surfactins as Inhibitors of microRNA Processing Using cat-ELCCA." *ACS Med. Chem. Lett.* 2021, 12, 878-886.
- Rosenblum, S. L.; Lorenz, D. A.; Garner, A. L. "A Live-Cell Assay for the Detection of pre-microRNA-Protein Interactions." *RSC Chem. Biol.* 2021, 2, 241-247.
- Cárdenas, E. L.; O'Rourke, R. L.; Menon, A.; Meagher, J. L.; Stuckey, J. A.; Garner, A. L. "Design and Synthesis of Cell-Permeable Inhibitors of Eukaryotic Translation Initiation Factor 4E (eIF4E)." *J. Med. Chem.* 2023, 66, 10734-10745.

Service: Professor Garner's service to her profession, the academy, and the University of Michigan is exemplary. She is serving on several key committees and her efforts as the director of the Interdepartmental Graduate Program in Medicinal Chemistry have been exceptional. Professor Garner has taken it upon herself multiple times to solicit student feedback about mentorship, curriculum, and culture in the department, leading to increased camaraderie among the students, particularly the first years that she has mentored. She initiated and led the program through an introspective review highlighted by the department retreat in Fall 2022. As mentioned above, she led a significant revision of our graduate courses and requirements. She has effectively and compassionately dealt with very difficult student situations and has done a fine job as faculty mentor for the ACS MedChem Student Affiliate Chapter.

Professor Garner's major leadership roles include serving as the director of the Interdepartmental Graduate Program in Medicinal Chemistry, serving as an Executive Committee member for the University of Michigan Center for RNA Biomedicine and College of Pharmacy, and serving on the Emerging Leaders Council for the Rogel Cancer Center. At the national level, Professor Garner is an active member of the ACS Division of Medicinal Chemistry serving on the Long-Range Planning Committee, where she has been involved in chairing or co-chairing 10 scientific symposia at national ACS meetings, and the Awards Committee. She is also a standing member of the Drug

Discovery and Molecular Pharmacology (DMP) NIH Study Section. This grant review service is in addition to serving on 13 ad hoc NIH Study Sections, serving as a member of the Singapore Ministry of Education Expert Panel on Chemistry and Chemical Engineering where she bi-annually traveled to Singapore to review grants, and an evaluator of various internal and external research programs. Professor Garner has consistently reviewed manuscripts for top journals and served as an editor and/or on the editorial board of leading publications including the *Journal of Medicinal Chemistry*, *ACS Medicinal Chemistry Letters*, *ACS Pharmacology and Translational Science*, *Medicinal Chemistry Reviews*, *SLAS Discovery*, and *Cell Chemical Biology*. These activities are extensive and indicative of Professor Garner's reputation.

External Reviewers:

Reviewer A: "Dr. Garner has received significant recognition in the field of medicinal chemistry including the coveted ACS Division of Medicinal Chemistry David W. Robertson Award. This is a highly competitive award whose recipient is selected by leaders in the field of medicinal chemistry. The award recognizes seminal contributions by young scientists to medicinal chemistry. In addition to this recognition, the level of funding she has obtained to support all research directions in her laboratory from a variety of funding sources, indicates the relevance of her work from a variety of perspectives."

Reviewer B: "The quality of her research publications is outstanding, and the majority of her original research articles have appeared in many of the most prestigious journals in the fields of medicinal chemistry, chemical biology, and biochemistry...Her work is highly innovative... Dr. Garner has an impressive grant portfolio with two RO1 NIH grants, the Dr. Ralph and Marian Falk Medical Research Trust fund, the Ono Pharma Foundation funding, and several local grants. In addition, she has an excellent history of prior research funding, one I am confident will continue throughout her career."

Reviewer C: "The research accomplishments of Dr. Garner are particularly impactful in the area of small molecule discovery and developing therapeutics targeting RNA and RNA-protein interactions. While there are a lot of ongoing efforts, progress has been somewhat slow due to the lack of knowledge regarding the chemical features that predispose small molecules to bind RNA, and understanding the important RNA structures amenable to targeting, and the role of dynamics. Dr. Garner's intuitive and proven successful approach is to target RNA-protein interactions. This basic method is both straightforward and powerful since protein is integrated into essentially every aspect of RNA in vivo function and regulates RNA."

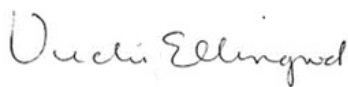
Reviewer D: "It is clear from her CV that Dr. Garner has successfully mentored a number of students, postdocs, and technicians. Their outcomes are excellent, and the number of awards they have earned is a testament to her careful mentoring. Moreover, her students have given quite a few short talks and posters at national and international meetings, as well as to have authorship on many of her papers...I observed Dr. Garner at the [Gordon Research Conference] GRC meeting this past summer talking and interacting with the students and postdocs at their posters, and it was clear to me she has an excellent way of making them feel at ease. As a result, I have no doubt her group feels the same way."

Reviewer E: "In addition to her extraordinary achievements in research and teaching, Prof. Garner's service to the institutional committees, professional societies, and relevant scientific communities is truly exceptional. She is the Director of the Interdepartmental Graduate Program in Medicinal Chemistry, and she was a member of the Executive Committee for the Center for RNA Biomedicine

and the Emerging Leaders Council for the Rogel Cancer Center. It is noteworthy that Dr. Garner is actively involved in the ACS Division of Medicinal Chemistry activities by serving on the Long-Range Planning Committee, and she has chaired or co-chaired 10 scientific symposia at the ACS meetings and the Awards Committee...All those not only indicate her incredible dedication and services to the communities but also superb reputation in the fields.”

Summary of Recommendation:

Professor Garner has demonstrated significant commitment and excellence in all aspects of her work and is a recognized pioneer in her field. She has become a leader in the field of RNA therapeutic development by working to target RNAs and RNA-protein interactions with small molecules in order to improve human health, and she is extremely dedicated to teaching and to serving her profession and university. It is with the support of the College of Pharmacy Executive Committee that I recommend Amanda L. Garner for promotion to professor of medicinal chemistry, with tenure, College of Pharmacy.



Vicki L. Ellingrod, PharmD, FCCP, FACNP
Dean
John Gideon Searle Professor, Professor of
Pharmacy
Professor of Psychiatry
College of Pharmacy

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