

PROMOTION RECOMMENDATION

The University of Michigan
College of Pharmacy
Department of Clinical Pharmacy

Haojie Zhu, associate professor of pharmacy, with tenure, Department of Clinical Pharmacy, College of Pharmacy, is recommended for promotion to professor of pharmacy, with tenure, Department of Clinical Pharmacy, College of Pharmacy.

Academic Degrees:

Ph.D.	2004	China Pharmaceutical University, Nanjing, China
M.B.A.	2003	Nanjing University, Nanjing, China
M.S.	2001	China Pharmaceutical University, Nanjing, China
Pharmacy Diploma (college level)	1994	China Pharmaceutical University, Nanjing, China

Professional Record:

2017 – Present	Associate Professor, with tenure, Department of Clinical Pharmacy, College of Pharmacy, University of Michigan
2013 – 2017	Assistant Professor, Department of Clinical Pharmacy, College of Pharmacy, University of Michigan
2009 – 2013	Research Assistant Professor, Center for Pharmacogenomics and Department of Pharmacotherapy and Translation Research, College of Pharmacy, University of Florida, Gainesville, FL
2008 – 2009	Research Assistant Professor, Department of Pharmaceutical and Biomedical Sciences, College of Pharmacy, Medical University of South Carolina, Charleston, SC
2004 – 2008	Post-Doctoral Fellow, Laboratory of Drug Disposition and Pharmacogenetics, College of Pharmacy, Medical University of South Carolina, Charleston, SC
2004	Research Associate, Department of Chemistry, Jackson State University, Jackson, MS
1995 – 1998	Marketing Manager, Jiangsu Branch, Qidong Gaitianli Pharmaceutical Co., Ltd., Qidong, China
1991 – 1995	Dentist, Xiaoji Central Hospital, Yangzhou, China
1990 – 1991	Residency Training Program in Dental Medicine, Yangzhou University, Subei Hospital, Yangzhou, China
1989 – 1990	Pharmacist, Xiaoji Central Hospital, Yangzhou, China

Summary of Evaluation:

Teaching: Professor Zhu is a very dedicated teacher and excellent mentor. He devotes substantial time and effort to the College of Pharmacy's undergraduate, professional (PharmD), and graduate (PhD and MS) programs, as well as provides mentorship to post-doctoral fellows. His primary teaching focus in the PharmD program is the development of research methods. This includes leadership of the "PharmD Investigations" course series and team teaching in the "Principles of Research and Problem Solving" course. This required course series is a signature

program within the UM College of Pharmacy that is unique and an important differentiating curricular component that sets Michigan apart from other schools. Professor Zhu's student ratings are excellent, and student comments indicate that he is a dedicated teacher who connects well with his students. Professor Zhu has mentored five PhD students since the Clinical Pharmacy Translational Sciences graduate program was re-started in 2018, including two who have graduated. He has trained many students and trainees in his laboratory, including three post-doctoral fellows, a master's student and several undergraduate students. He has mentored numerous PharmD students on their required research projects and capstone seminar presentations.

Research: Professor Zhu is an outstanding scientist in the area of precision pharmacotherapy. His work focuses on developing new tools that can guide the selection of the right drug and dosage for the right individual at the right time. He is developing sophisticated methods to quantify the expression of drug metabolism enzymes (DMEs) in plasma as a surrogate for the rich reservoir of DMEs in the liver. He has established a national and international reputation as a leading expert on the enzyme system known as carboxylesterase 1 (CES1), which is responsible for the metabolism of many marketed drugs. Professor Zhu was the first to demonstrate that there were clinically significant consequences of the genetic polymorphisms of this enzyme system. A common medication impacted by the CES1 pathway is methylphenidate that is used to treat patients with attention-deficit/hyperactivity disorder (ADHD). An estimated six million children and adolescents in the US are diagnosed with this disorder, which carries on into adulthood for many. Professor Zhu's research funding success is exceptional with consistent federal funding over many years. He has published 92 peer-reviewed research manuscripts in highly respected journals and is senior or first author on 21 of the 32 papers published since his promotion in 2017. He has made several invited presentations and filed four provisional patents.

Recent and Significant Publications:

- Shi J, Xiao J, Wang X, Jung SM, Bleske BE, Markowitz JS, Patrick KS, Zhu HJ. Plasma Carboxylesterase 1 Predicts Methylphenidate Exposure: A Proof-of-Concept Study Using Plasma Protein Biomarker for Hepatic Drug Metabolism. *Clin Pharmacol Ther.* 2022 Apr;111(4):878-885.
- Her LH, Wang X, Shi J, Choi HJ, Jung SM, Smith LS, Wu AH, Bleske BE, Zhu HJ. Effect of CES1 genetic variation on enalapril steady-state pharmacokinetics and pharmacodynamics in healthy subjects. *Br J Clin Pharmacol.* 2021 Dec;87(12):4691-4700.
- He B, Shi J, Wang X, Jiang H, Zhu HJ. Genome-wide pQTL analysis of protein expression regulatory networks in the human liver. *BMC Biol.* 2020 Aug 10;18(1):97.
- Zhu HJ, Patrick KS[#], Straughn AB, Reeves III OT, Bernstein H, Shi J*, Johnson HJ, Knight JM, Smith AT, Malcolm RJ, Markowitz JS*. Ethanol Interactions with Dexmethylphenidate and dl-Methylphenidate Spheroidal Oral Drug Absorption Systems in Healthy Volunteers. *J Clin Psychopharmacol.* 2017 Aug;37(4):419-428.
- Shi J, Wang X, Nguyen J, Bleske BE, Liang Y, Liu L, Zhu HJ*. Dabigatran Etextilate Activation is Affected by the CES1 Genetic Polymorphism G143E (rs71647871) and Gender. *Biochemical Pharmacology* 2016 Nov 1;119:76-84.

Service: Professor Zhu is an excellent citizen of the university and his profession. In addition to his service on many College of Pharmacy committees, he recently served as the college's representative to the UM Faculty Senate. He is a member of several national organizations and has assumed various leadership roles, including his election as councilor (2016) and secretary/treasurer (2021) of the Division of Drug Metabolism and Disposition within the American Society for Pharmacology and Experimental Therapeutics (ASPET). He currently serves on the Executive Committee of this 4000-member organization that includes key scientific opinion leaders and NIGMS study section members. He consistently serves as a grant reviewer and is a sought-after manuscript reviewer for multiple journals. He currently serves as a consulting editor for the journal *Clinical Therapeutics*.

External Reviewers:

Reviewer A: "He has established himself as a well-regarded expert in the pharmacogenetics and pharmacology of carboxylesterases. He has also leveraged his impressive skills in mass spectrometry and proteomics to other areas in drug metabolism and pharmacokinetics. His work has been impactful, judging from the citation data, as well as his recognition by peers...His lab has made outstanding contributions to the field."

Reviewer B: "...Dr. Zhu has made a significant impact in his field of research...Dr. Zhu has created a unique research niche combining proteomic and pharmacogenomic approaches to further precision pharmacotherapy...While the output of publications for Dr. Zhu is outstanding, the quality of the work is equally as impressive..."

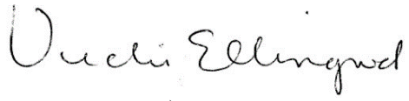
Reviewer C: "I am very impressed with the quality, quantity, and growth of Dr. Zhu's research over his academic career...These important findings are contributing to a body of knowledge that can be applied to developing personalized pharmacotherapies that are safer and/or more effective than a one size fits all approach...He has achieved national and international recognition as a leading scientist and has demonstrated commitment to furthering research and education in the College of Pharmacy."

Reviewer D: "Dr. Zhu has a strong nationally recognized track record of research in pharmacogenomics...Dr Zhu has advised an impressive number of students...It appears that these trainees were productive under Dr Zhu's guidance, with multiple first- or co-author papers published based on their works...Dr. Zhu has demonstrated excellent accomplishments in research..."

Reviewer E: "...Dr. Zhu has risen to a leader and a well-recognized expert in his research field...Dr. Zhu is an excellent educator who has put tremendous efforts in the improvement of teaching in the Pharmacy and Graduate Programs...his research has significant importance to human health."

Reviewer F: "...Dr. Zhu has established a highly productive translational research program that bridges basic research and clinical investigations...Dr. Zhu has demonstrated a record of sustained and impactful research accomplishments... He has emerged as a world class scholar and expert in CES1 pharmacogenetics and translational proteomics research."

Summary of Recommendation: Professor Zhu is an outstanding scientist and dedicated teacher, mentor, and citizen of his profession who is having a positive impact on human health. It is with the support of the College of Pharmacy Executive Committee that I recommend Haojie Zhu for promotion to professor of pharmacy, with tenure, Department of Clinical Pharmacy, College of Pharmacy.



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

May 2023