

PROMOTION RECOMMENDATION
The University of Michigan
College of Pharmacy
Department of Clinical Pharmacy

Manjunath Pai, 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:

PharmD 1998 University of Texas at Austin, College of Pharmacy, and University of Texas Health Sciences Center at San Antonio

Professional Record:

2016 – present Associate Professor (with tenure), Department of Clinical Pharmacy, University of Michigan
2015 – 2016 Professor (with tenure), Albany College of Pharmacy and Health Sciences, Albany, NY
2009 – 2015 Associate Professor, Albany College of Pharmacy and Health Sciences, Albany, NY
2008 – 2009 Scientist, Translational Medicine, Institute for Clinical Pharmacodynamics, Ordway Research Institute, Latham, NY
2007 – 2008 Associate Professor (with tenure), College of Pharmacy, University of New Mexico, Albuquerque, NM
2001 – 2007 Assistant Professor, College of Pharmacy, University of New Mexico, Albuquerque, NM

Summary of Evaluation:

Teaching: Professor Pai is a highly committed and effective educator. He teaches a wide range of courses in the PharmD curriculum, as well as in our re-engineered BS program in pharmaceutical sciences and newly launched PhD program in clinical pharmacy translational science. He has developed new courses for these programs and collaborated across disciplines in revamping the pharmacokinetics component of the PharmD program. He has consistently received excellent student ratings for his teaching, with an average score of 4.73 on a scale of 1-5, which is above the College of Pharmacy 50th percentile score of 4.4. Students also provided high ratings for courses coordinated by Professor Pai.

Professor Pai is also an outstanding mentor. He has served as the advisor of four students in PharmD seminar, as well four PharmD investigations students. In addition, Professor Pai provided two rotations for first-year PhD students and mentored two post-doctoral fellows, one of which has successfully secured a position in industry. Prior to coming to the University of Michigan in 2016, Professor Pai mentored a total of 21 residents, post-doctoral fellows, masters students, and PharmD research project students.

Professor Pai devotes significant effort toward helping his students and trainees learn and has been recognized with numerous teaching awards: two didactic teaching awards (2004 and 2008) and one preceptor award (2005) from the University of New Mexico and a Preceptor of the Year award (2014) from the Albany College of Pharmacy and Health Sciences.

Research: Professor Pai is recognized as a leader in the field of antibiotic dosing, particularly in special populations, with a primary emphasis on underrepresented patients, such as those who are obese or those with renal impairments. His goal is to replace empiric drug dosing by body weight with a more precise approach, and he has coined the new term “pharmacomorphomics” as he works with others to blaze trails in this novel area. Professor Pai is an extraordinarily prolific scientist. According to Scopus, he has published 115 papers with impact factors ranging from three to ten, and he has an h-index of 27. In the three years since coming to Michigan, he has published 40 peer-reviewed papers, 14 of which have him listed as senior or first author. Twenty-four of these papers were led by his trainees. Professor Pai also has eight book chapters to his credit since 2016, half of which list him as first author and the other half list his trainees as first author. Professor Pai has had national and international impact as evidenced by his 11 invited research presentations and nine other invited presentations since 2016. These presentations are just a small portion of the more than 120 presentations that he has given during his career. Most notably, of his research presentations (including both poster and platform presentations), the majority since 2016 have been given by his trainees at national and international conferences. This demonstrates his dedication to training and mentoring. Professor Pai is also successful at funding his work. Since he joined the University of Michigan, he has \$1.1 million in grants, and he is a co-investigator with effort on an additional \$22 million in grants and contracts. His work in antimicrobials and drug dosing is exemplified by awards that he has received: Paper of the Year, Society of Infectious Diseases Pharmacists (2019); Researcher of the Year, Albany College of Pharmacy and Health Sciences (2014); Impact Paper of the Year, Society of Infectious Diseases Pharmacists (2013); and Regulatory Science Excellence Award from the Renal Drug Dosing Group at the FDA (2011).

Recent and Significant Publications:

- Crass, R.L., Rodvold, K.A., Mueller, B.A. & Pai, M.P. Renal Dosing of Antibiotics: Are We Jumping the Gun? *Clin Infect Dis* 68 (9), 1596-1602, (2019). {Awarded Pharmacotherapy Paper of the Year by the Society of Infectious Diseases Pharmacists} Impact Factor: 9.117
- Crass, R.L., Cojutti, P.O., Pai, M.P. & Pea, F. A Reappraisal of Linezolid Dosing in Renal Impairment to Improve Safety. *Antimicrob Agents Chemother* 63(8), e00605-19,(2019). {Summary and comment in *New Engl J Med Journal Watch Infectious Diseases* 8/21/19} Impact Factor: 4.256
- Crass, R.L. & Pai, M.P. Estimating Renal Function in Drug Development: Time to Take the Fork in the Road. *J Clin Pharmacol* 59 (2), 159-167, (2019). Impact Factor: 2.881
- Patel, N., Pai, M.P., Rodvold, K.A., Lomaestro, B., Drusano, G.L. & Lodise, T.P. Vancomycin: we can't get there from here. *Clin Infect Dis* 52 (8), 969-974, (2011). Impact Factor: 9.117
- Pai, M.P. & Paloucek, F.P. The origin of the “ideal” body weight equations. *Ann Pharmacother* 34 (9), 1066-1069, (2000). Impact Factor: 2.443

Service: Professor Pai contributes extensive service to his profession, the academy, and the university, with several leadership roles on his record. He serves as the deputy director of the

College of Pharmacy's Pharmacokinetics Core, which is a component of Michigan Drug Discovery that provides high quality services to help propel drug discovery and development research. Professor Pai is well respected by his peers as evidenced by his election as a fellow of the American College of Clinical Pharmacology. He is a member of several national and international professional organizations and has served on many committees within these organizations, including service as a co-chair of the Interscience Conference on Antimicrobial Agents and Chemotherapy Program Committee for the American Society of Microbiology. This is particularly noteworthy and indicative of his international reputation, as he was the only pharmacist on this committee. Professor Pai also serves on the editorial boards for several journals. His contributions to service are exemplary.

External Reviewers:

Reviewer A: "...Dr. Pai has received both national and international recognition...has demonstrated that he is a highly capable educator...student evaluations provided were excellent...I would rank Dr. Pai's service contributions to the professional and governmental organization as outstanding.."

Reviewer B: "I am very impressed with the career and accomplishments of Amit...he has demonstrated a relentless quest for excellence in his scholarly work and his teaching...his work is creative and challenges long held dogma in the areas of infectious diseases and pharmacokinetics...He also has become a pioneer in the field of 'pharmacomorphomics'...is a leader in professional societies and has even served as a bridge between the American Society of Microbiology and the Society of Infectious Diseases Pharmacists...clearly a visionary leader..."

Reviewer C: "His substantial federal funding as a co-investigator and independent funding from foundations are impressive and place him solidly in the top 5-10% of the field. Especially impressive is his track record since arriving at Michigan...Dr. Pai has demonstrated excellence in teaching and has received four college level awards for his teaching...Student evaluations of his didactic lectures nearly universally exceed college average for the course...These service contributions are especially noteworthy in that they are interdisciplinary..."

Reviewer D: "...his merits in teaching speak for themselves. The student feedback...showed that he is thought highly of as an educator...he is a dedicated and profound teacher... Dr. Pai's accomplishments in service...stretch wide and far...amazing level of dedication to the field...not just at the local level but beyond to national and even international."

Reviewer E: "He is a fixture in the infectious diseases clinical pharmacy community and is among the world's leading authorities on dosing antimicrobial agents in unique patient populations, particularly in the obese patient...Dr. Pai has achieved a remarkable level of accomplishment in the area of scholarship...his recent work...was recently selected by the Society of Infectious Diseases Pharmacists for the prestigious Pharmacotherapy Paper of the Year award. Indeed, this is the second time that Dr. Pai has won this award...significant impact on the profession and within his scientific discipline...His value to the academy, the profession, and to our scientific field cannot be overstated..."

Summary of Recommendation: Professor Pai is a very prominent, successful, and dedicated researcher, teacher and scholar who has made significant impact in his field and on our students. He is an extremely collaborative colleague who is highly valued for his service contributions at all levels. It is with the support of the College of Pharmacy Executive Committee that I recommend Manjunath Pai for promotion to professor of pharmacy, with tenure, Department of Clinical Pharmacy, College of Pharmacy.



James T. Dalton
Dean, College of Pharmacy

May 2020