

PROMOTION RECOMMENDATION  
THE UNIVERSITY OF MICHIGAN  
MEDICAL SCHOOL  
DEPARTMENT OF INTERNAL MEDICINE

Panduranga S. Rao, M.B.B.S., associate professor of internal medicine, with tenure, Department of Internal Medicine, Medical School, is recommended for promotion to professor of internal medicine, with tenure, Department of Internal Medicine, Medical School.

Academic Degrees:

M.S.	2005	University of Michigan
M.B.B.S.	1986	University of Madras, Madras, India

Professional Record:

2009-present	Associate Professor of Internal Medicine, University of Michigan
2003-2009	Assistant Professor of Internal Medicine, University of Michigan,
2000-2003	Assistant Professor of Internal Medicine, Medical College of Toledo, Toledo, OH

Summary of Evaluation:

Teaching: Dr. Rao plays a significant role in education at the University of Michigan. He teaches undergraduate students, medical students, house officers, nephrology fellows, as well as junior faculty. Dr. Rao has served as a small group leader for the annual M-1 Nephrology Diseases sequence for about 20 medical students, and supervises M-4 students during their nephrology electives. He has served as the program director of the Nephrology Fellowship program since 2009. His most significant teaching contribution has been in introducing a new and innovative nephrology fellowship training program curriculum. Under his leadership, the nephrology fellowship curriculum has expanded and includes a section on palliative care. In addition, in conjunction with the core residency program, he has formulated an outpatient nephrology curriculum for internal medicine residents. He is also helping to establish a collaborative training program in nephrology at St Paul's Millennium Medical College in Addis Ababa, Ethiopia.

Research: Dr. Rao is an outstanding clinical scientist with national and international recognition specializing in the area of outcomes of patients with chronic kidney disease (CKD) and end stage renal disease (ESRD). He is well known for his exceptional and innovative work in developing a kidney score which predicts the risk of kidney transplant failure. This score, called the Kidney Donor Risk Index (KDRI), was adopted and used by the U.S. Health and Human Services in developing the new national organ allocation policy that went into effect in December 2014. This research has had a significant and positive impact in the field of kidney transplantation and on the lives of these patients. Dr. Rao's work has been well funded throughout his career. He is the principal investigator of an NIH funded study called the CRIC (Chronic Renal Insufficiency Cohort Study). This study offers a meaningful opportunity to lower the high cardiovascular morbidity and mortality in patients with CKD. Dr. Rao has published 44 manuscripts in high-impact journals (15 while in rank, with ten as first or senior author while in rank). He has 28

abstracts, one book chapter, and one patent. Dr. Rao's national and international reputation is recognized by his numerous extramural invited presentations. Dr. Rao has served internationally as an editorial board member for the journal, *Kidney Disease and Transplantation*, and as an abstract reviewer for The Transplantation Society. He serves as an ad hoc reviewer for numerous journals including *BMC Nephrology*, *Transplantation International*, and *American Journal of Medical Science*.

#### Recent and Significant Publications:

Chen A, Martz K, Kershaw D, Magee J, Rao PS: Mortality risk in children after renal allograft failure: a NAPRTCS study. *Pediatr Nephrol* 25: 2517-2522, 2010.

Woodside KJ, Merion RM, Leichtman AB, de los Santos R, Arrington CJ, Rao PS, Sung RS: Utilization of kidneys with similar kidney donor risk index values from standard versus expanded criteria donors. *Am J Transplant* 12:2106-2114, 2012.

Afshinnia F, Doshi H, Rao P: The effect of different dialysate magnesium concentrations on QTc dispersion in hemodialysis patients. *Ren Fail* 34:408-412, 2012.

Jiang Y, Villeneuve P, Schaubel D, Mao Y, Rao P, Morrison H: Long-term follow-up of kidney transplant recipients: comparison of hospitalization rates to the general population. *Transplant Res* 24:15, 2013.

Weitzel W, Hamilton J, Wang X, Bull J, Vollmer A, Bowman A, Rubin J, Kruger G, Gao J, Heung M, Rao P: Quantitative lung ultrasound comet measurement: Method and initial clinical results. *Blood Purif* 39:37-44, 2015.

Service: Dr. Rao is regarded as a dedicated and skilled physician who is active in clinical care. His clinical expertise is in improving the management of patients with CKD and ESRD. Dr. Rao plays a significant service role within the institution, the Department of Internal Medicine and the division. He is the director of the Nephrology Fellowship Training Program. In addition, he directs the clinical activities of the outpatient dialysis program as the director of the Michigan Dialysis Service. He has served as a member on several institutional committees at the University of Michigan including the Institutional Review Board (IRB), the Scholarship Oversight Committee for Nephrology Fellows, as a dissertation committee member for a Ph.D. candidate in the Department of Biostatistics, and as a member of the CV Review Committee for the Department of Internal Medicine. Dr. Rao serves as a volunteer physician at the University of Michigan Student Run Free Clinic. At the national level, Dr. Rao serves as a member on the Program Director's Advisory Committee to the American Board of Internal Medicine Nephrology Group, as a member of the Renal Research Institute, as Item Writer for the Training Exam of the American Society of Nephrology (ASN)/National Board of Medical Education, and as American Society of Nephrology (ASN) Abstract reviewer for ASN Week since 2013.

#### External Reviewers:

Reviewer A: "Dr. Rao is involved with several institutional service activities. These include some considerable time consuming activities including the Institutional Review Board, Clinical Director of Michigan Dialysis Service, and Program Director of the Nephrology Training

Program. Dr. Rao also has been very active with the Program Directors administration on a national level.”

Reviewer B: “Dr. Rao’s publications have made important contributions to the literature. His work has spanned the spectrum of nephrology including peritoneal dialysis, hemodialysis and transplantation. Of particular note is his work in development of the donor risk score, which is an important advance in systemic evaluation of kidney donors. In addition, his innovative work in using new technology to measures [sic] volume status in kidney disease is likely to have high clinical impact in the future.”

Reviewer C: “I have listened to Dr. Rao’s lectures at the American Society of Nephrology. He certainly is a talented and passionate teacher. He has demonstrated his ability to deliver lectures on diverse topics including kidney transplant, chronic kidney diseases and glomerular diseases, delivered to diverse audiences. He has been acknowledged for his teaching skills throughout his career.”

Reviewer D: “It is obvious that Dr. Rao has numerous interests and he has made significant contributions in many areas. However, in my opinion, his most important work to date and going forward, involves the studies of lung ultrasound studies and volume. Poor volume control is responsible for left heart failure and the ultimate development of pulmonary hypertension.”

Reviewer E: “Dr. Rao has the unique ability to take otherwise standard prospective cohort studies and convert them into critical observations that have led insight into the physiology of disease, as well as their link to important outcomes. While it is notable Dr. Rao has nearly 50 publications to his name as well as dozens of abstracts, several of his manuscripts have led to additional studies, again, advancing the field especially with regard to fluid clearance, optimizing donor kidney patients, and understanding chronic kidney disease and lupus nephritis.”

Summary of Recommendation:

Dr. Rao is an exceptional physician investigator who has made important contributions in his work in the area of CKD and ESRD, and in his teaching and service contributions. His professional activities and scholarly work are expected to have a significant impact on our institution and on his field of research well into the future. For these reasons, I enthusiastically recommend the promotion of Panduranga S. Rao, M.B.B.S. to professor of internal medicine, with tenure, Department of Internal Medicine, 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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