Approved by the Regents
May 17, 2012

PROMOTION RECOMMENDATION
UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF INTERNAL MEDICINE

Aman Chugh, M.D., assistant professor of internal medicine, Department of Internal Medicine, Medical School, is recommended for promotion to associate professor of internal medicine, with tenure, Department of Internal Medicine, Medical School.

Academic Degrees:

M.D.	1996	Wayne State University
B.S.	1992	University of Michigan

Professional Record:

2005-present	Assistant Professor of Internal Medicine, University of Michigan
2003-2005	Lecturer, Department of Internal Medicine, University of Michigan

Summary of Evaluation:

Teaching: Dr. Chugh has built an excellent reputation as a teacher and mentor to students and trainees at various levels including undergraduates, medical students, residents and fellows. He works with fellows on a daily basis in the electrophysiology (EP) laboratory which is a major part of his teaching responsibilities and role as a cardiac electrophysiologist. He is also the director of the weekly EP fellows' conference, which prepares fellows for board examination. Dr. Chugh consistently scores highly on evaluations and students have enthusiastically provided feedback attesting to his impact as an educator, "Dr. Chugh is an exceptional teacher and clinician. His knowledge level and technical expertise are second to none. …a great model for fellows to learn from." He serves as a mentor to general cardiology, EP and research fellows, meeting with them on a regular basis to discuss new projects, existing research, preparation for upcoming national meetings, manuscript submission and revision and career development. On recent evaluations for 3rd and 4th year medical students in which he interacts with during their rotations on the cardiology service, Dr. Chugh scored an excellent 4.75 out of 5. As a result of their work with Dr. Chugh, his mentees have gone on to publish in high impact publications such as *Circulation, Heart Rhythm, Journal of the American College of Cardiology* and the *Journal of Cardiovascular Electrophysiology*. Five fellows he had mentored now hold academic posts at institutions in the United States and abroad. Dr. Chugh is also a first-rate speaker and has been invited to lecture extensively both nationally and internationally at educational conferences for both trainees and practicing electrophysiologists. His national and international teaching activities include presenting practical "how to" lectures and carrying out "live demonstrations" on catheter ablation procedures involving complex arrhythmias since these techniques are not typically performed at many centers.

Research: Dr. Chugh is an international leader in the study of mechanisms of atrial fibrillation (AF) with his research interests including novel uses of device therapy. His pioneering work has demonstrated that extensive ablation of AF may be complicated by a related arrhythmia called atrial flutter, which often requires repeat procedures. His work has shown that these arrhythmias may be very challenging to eliminate because they may originate from unusual sites within and outside the heart. Catheter ablation of AF and post-ablation flutter are some of the most challenging procedures that are performed in the electrophysiology laboratory. Dr. Chugh was the first to describe that a significant number of complex arrhythmias require ablation within the narrow confines of the coronary sinus venous system. He also demonstrated how to distinguish right from left atrial flutter based on the electrocardiogram. Dr. Chugh has a consistent track record as first and senior author and lists an impressive 114 peer-reviewed publications on his CV, with 12 as first author. His publications on catheter ablation of macroreentrant atrial tachycardia are widely cited.

Recent and Significant Publications:

Yokokawa, M, Sundaram B, Stojanovska J, Garg A, Oral H, Morady F, Chugh A: Impact of mitral isthmus anatomy on the likelihood of linear block at the mitral isthmus in patients undergoing catheter ablation of persistent atrial fibrillation. *Heart Rhythm* 2011 (accepted for publication).

Chan CP, Wong WS, Pumprueg S, Veerareddy S, Billakanty S, Ellis C, Chae S, Buerkel D, Aasbo J, Crawford T, Good E, Jongnarangsin K, Ebinger M, Bogun F, Pelosi F, Oral H, Morady F, Chugh A: Inadvertent electrical isolation of the left atrial appendage during catheter ablation of persistent atrial fibrillation. *Heart Rhythm* 7:173-180, 2010.

Chae S, Oral H, Good E, Dey S, Wimmer A, Crawford T, Wells D, Sarrazin JF, Chalfoun, Kuhne M, Fortino F, Huether E, Lemerand T, Pelosi F, Bogun F, Morady F, Chugh A: Atrial tachycardia following circumferential pulmonary vein ablation of atrial fibrillation: Mechanistic insights, results of catheter ablation, and risk factors for recurrence. *J Am Coll Cardiol* 50:781-787, 2007.

Chugh A, Latchamsetty R, Oral H, Elmouchi D, Tschopp D, Reich S, Igic P, Lemerand T, Good E, Bogun F, Pelosi F, Morady F: Characteristics of cavotricuspid isthmus-dependent atrial flutter following left atrial ablation of atrial fibrillation. *Circulation* 113:609-615, 2006.

Chugh A, Oral H, Han J, Tamirisa K, Good E, Lemola K, Elmouchi D, Tschopp D, Reich S, Bogun F, Pelosi F, Morady F: Catheter ablation of atypical atrial flutter and atrial tachycardia within the coronary sinus following left atrial ablation for atrial fibrillation. *J Am Coll Cardiol* 46:83-91, 2005.

Service: Dr. Chugh has been the co-director of the EP fellowship program since 2008 and was appointed to director of clinical operations for the arrhythmia service in 2011. As director of clinical operations, Dr. Chugh provides strategic direction of current and new clinical initiatives for the arrhythmia service, including those involving outreach opportunities working in conjunction with the director of strategic outreach and the chief of cardiovascular medicine. His

memberships and editorial positions include national and well-recognized organizations such as the American Heart Association (AHA), Heart Rhythm Society (HRS), American College of Cardiology and the *Journal of Interventional Cardiac Electrophysiology*. He regularly presents at their meetings and also chairs scientific sessions. He is a reviewer for seven different peer-reviewed journals such as *Heart Rhythm*, *PACE* and has even been recognized as an "elite reviewer" for the *Journal of the American College of Cardiology* (JACC). Dr. Chugh was recently invited to serve as associate editor on the jointly sponsored American College of Cardiology (ACC) and HRS CardioSource website. Dr. Chugh has also been actively involved in the community, participating in annual support group meetings dedicated to patients with implantable cardioverter-defibrillators (ICD) and discussing feedback on how patients and their families cope with living with an implantable device and receiving ICD shocks.

Professional Work: Dr. Chugh's expertise relates to a range of patients with AF who have relatively normal hearts to those with advanced heart disease and have been turned down at other institutions, and to those who have previously undergone multiple procedures for AF and now have post-ablation or post-surgical atrial flutter. In addition, he also performs implantation of cardiac electronic devices, such as permanent pacemakers, ICDs, and biventricular ICDs for advanced heart failure.

External Reviewers:

Reviewer A: "I consider him to be an outstanding academic clinical electrophysiologist. He is best known for his research on catheter ablation of atrial fibrillation and atrial flutter....He is a first rate speaker and has also built an excellent reputation as a speaker and teacher....I consider Dr. Chugh to be at the 'top of his class' in terms of his peers throughout the country..."

Reviewer B: "It is without question and it is accurate to say that Dr. Chugh is a phenomenally impressive clinical investigator....Dr. Chugh is without a doubt one of the most knowledgeable, experienced, and smartest people in the field of atrial fibrillation ablation and catheter ablation of atrial arrhythmias."

Reviewer C: "Thus, Dr. Chugh is an accomplished physician-scientist with significant clinical and educational duties. His productivity clearly exceeds that of the majority of electrophysiologists at his academic rank. He participates actively in national organizations related to cardiology and electrophysiology, and has generated a national and international reputation for this."

Reviewer D: "Aman is nationally and internationally recognized for having described the various mechanisms of these complex arrhythmias, and how to safely ablate them....Aman also has a national and international reputation for his technical skills in the EP lab....Electrophysiologists across the country regularly refer their patients to Aman."

Reviewer E: "...I want to emphasize that Dr. Chugh is a clinician scientist of the highest caliber....His exceptional skills and eminent knowledge would make him a great candidate for any academic program."

Summary of Recommendation:

Dr. Chugh's research focus includes mechanisms of atrial fibrillation, determining the optimal approach to ablation of patients with atrial fibrillation, and evaluating the impact of rapid pacing in patients with ischemic heart disease. Dr. Chugh's national and international reputation as a leading expert in the field is widely regarded. Additionally, he makes extremely valuable contributions to the educational goals of the Department of Internal Medicine. I am pleased to recommend Aman Chugh, M.D. for promotion to associate professor of internal medicine, with tenure, Department of Internal Medicine, Medical School.

James O. Woolliscroft, M.D.
Dean
Lyle C. Roll Professor of Medicine

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