Approved by the Regents
May 18, 2023

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

Sascha N. Goonewardena, 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.	2003	University of Michigan
B.S.	1999	University of Michigan

Professional Record:

2015-Present	Assistant Professor of Internal Medicine, University of Michigan
2010-2015	Clinical Lecturer of Internal Medicine, University of Michigan

Summary of Evaluation:

Teaching: Dr. Goonewardena has been very active in teaching, providing both clinical and research mentoring, as well as lecturing in various venues. His teaching philosophy focuses on fostering the development of knowledge and skills related to basic and translational research, including research methods (design, measurement, data analysis, interpretation), research ethics, grant preparation, and manuscript writing. He has served as an excellent mentor to graduate students, medical students, and post-doctoral fellows. Most recently, he has mentored three individuals who wished to gain research experience in biomedical engineering, immunology, and vascular biology after their undergraduate and graduate training. He currently serves on the dissertation committee for a Ph.D. student in the School of Kinesiology. In the clinical setting, he supervises cardiology clinical fellows in the inpatient and outpatient services.

Research: Dr. Goonewardena's training in novel technologies and bioinformatic approaches, coupled with his deep interest in understanding the innate immune mechanisms that underlie cardiovascular disease, have guided his research efforts and collaborations. He has built his research expertise on emerging technologies and foundations in immunology and vascular biology, in order to focus further on understanding the innate immune mechanisms that underlie Atherosclerotic Cardiovascular Disease (ASCVD) and heart failure (HF). His current research can be broadly defined in three areas: (1) innate immune mechanisms of thrombosis in COVID-19 and atherosclerotic cardiovascular disease (ASCVD); (2) innate immune mechanisms of heart failure (HF) inflammation, glycocalyx, and mechanical activation of immune cells; and (3) emerging diagnostics and therapeutics for cardiovascular disease (CVD). His lab was the first to show that monocytes subsets are dysregulated in acute HF patients and that myeloid ATP catabolism regulates murine repair responses to myocardial infarction. While simultaneously pursuing his own laboratory's success, his work has led to several independent collaborations, as well as publications outside our department and institution. This is evidenced by Dr. Goonewardena's close partnership with faculty at the Icahn School of Medicine at Mount Sinai. Collaborations on immune-mediated thrombosis have resulted in several publications and a submission to the American Heart Association national conference, which was recognized as one of the highest-ranked basic science submissions for 2022. Dr. Goonewardena has authored 52 peer-reviewed publications and two book chapters. He also has four patents to his name, with a fifth application in process. Dr. Goonewardena's research is currently funded by five small research grants in his area of expertise, one of which is federally funded while the other four are internally funded, and

he was previously funded by a mentored K08 award. He is the PI of a recently awarded VA Merit Award in submission for "Coordination of cardiac inflammation/remodeling in heart failure by myeloid catabolism of purinergic DAMPs" which has a start date of April 2023.

Recent and Significant Publications:

Choi D, Waksman O, Shaik A, Mar P, Chen Q, Cho DJ, Kim H, Smith RL, Goonewardena SN, Rosenson RS, "Association of Blood Viscosity With Mortality Among Patients Hospitalized With COVID-19," *J Am Coll Cardiol* 2022 Jul 26;80(4):316-328. doi: 10.1016/j.jacc.2022.04.060. PMID: 35863848; PMCID: PMC9291270.

Goonewardena SN, Grushko OG, Wells J, Herty L, Rosenson RS, Haus JM, Hummel SL, "Immune-mediated glycocalyx remodeling in hospitalized COVID-19 patients," *Cardiovasc Drugs Ther* 2021 PM34792686/PMC8600103.

Penn CA, Kun Yang K, Zong H, Lim JY, Cole A, Yang D, Baker J, Goonewardena SN, Buckanovich RJ, "Therapeutic impact of nanoparticle therapy targeting tumor-associated macrophages," *Mol Cancer Ther* 17(1): 96-106, 2018. PMC5752569.

Sutton NR, Hayasaki T, Hyman MC, Anyanwu AC, Hui Liao H, Petrovic-Djergovic D, Badri L, Baek AE, Walker N, Fukase K, Kanthi Y, Visovatti SH, Horste EL, Ray JJ, Goonewardena SN, Pinsky DJ, "Ectonucleotidase CD39-driven control of postinfarction myocardial repair and rupturen," *JCI Insight* 12(1): e89504, 2017. 28097233.

Goonewardena SN, Stein AB, Tsuchida RE, Rattan R, Shah D, Hummel SL, "Monocyte subsets and inflammatory cytokines in acute decompensated heart failure," *J Card Fail* 22(5): 358-65, 2016. PM26705751/PMC4861694.

Service: Dr. Goonewardena is an excellent physician-scientist who, despite his tremendous scholarly pursuits, provides outstanding patient care to cardiology patients in the inpatient and outpatient settings. He is an active member of several professional societies, including the American Heart Association and the American College of Cardiology. He currently serves as an associate editor for *Cardiovascular Drugs and Therapeutics* and as an ad-hoc journal reviewer for multiple industry-leading journals, including the *Journal of the American Heart Association* and the *Journal of the American College of Cardiology*. Dr. Goonewardena's expertise and reputation as a leader in innate immunity and cardiovascular disease are evidenced by his service as a member of two national study sections, presently as a member of the American Heart Association study review group related to vascular wall biology.

External Reviewers:

Reviewer A: "It is a pleasure to write this strongest possible [sic] letter of support…He works in a challenging field, specifically immune mediators of disease for which there is no replacement for human investigation…Dr. Goonewardena, is an accomplished physician-scientist to this point and is poised and positioned [sic] well for success in the future."

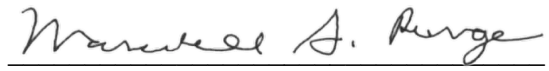
Reviewer B: "Although Dr. Goonewardena's scholarship appears to encompass a diverse area of investigation, the common thread is his focus on innate immune cells in a variety of cardiovascular pathologies. He, and his work, have garnered notoriety and national recognition in this regard. He is a charter member of the American Heart Association Vascular Wall Biology Review Group (study section), which is comprised of some of the leading vascular biologists in the country. He has been a member of the NHLBI PPG study review group and is an Associate Editor of Cardiovascular Drugs and Therapeutics."

Reviewer C: "I have asked him to review numerous manuscripts (since 2016 he reviewed 36 manuscripts for the Journal). I have found his reviews detailed, fair and intelligent. I am impressed by his knowledge and wisdom."

Reviewer D: "Dr. Goonewardena has published 52 manuscripts indexed in PubMed, including about 13 first author publications and about 3 last author research publications. Dr. Goonewardena received a K08 award to study the effect of nanoparticles upon macrophages in the setting of atherosclerosis. He has funding from the NIH NHLBI for a mechanistic substudy as an investigator in the collaborative COVID-19 clinical trial called ACTIV-4. He also has research funding from national foundations."

Reviewer E: "He has already made major strides in the field of vascular and immunocardiology and to no surprise has received several prestigious grants to support his work. His academic contributions to this field have already been significant and he continues to add to it. He is clearly being recognized as a leader in this field and has received honors and awards and invitation to serve on the peer-review process for many important journals."

Summary of Recommendation:
Dr. Goonewardena is a physician-scientist with highly specialized advanced expertise regarding the role of immune mechanisms in cardiovascular disease. He has established himself as a significant contributor to our clinical and teaching missions and is an exceptional collaborator. I am pleased to recommend Sascha N. Goonewardena, M.D. for promotion to associate professor of internal medicine, with tenure, Department of Internal Medicine, Medical School.



Marschall S. Runge, M.D., Ph.D.
Executive Vice President for Medical Affairs
Dean, Medical School

May 2023