**Approved by the Regents**
**May 18, 2023**

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

David O'Dwyer, M.B., BC.h., BAO, Ph.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:

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| Ph.D. | 2014 | University College Dublin, National University of Ireland |
| M.B., BC.h., BAO | 2004 | University College Cork School of Medicine, National University of Ireland |

Professional Record:

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| 2018-present | Assistant Professor of Internal Medicine, University of Michigan |
| 2017-2018 | Clinical Lecturer of Internal Medicine, University of Michigan |

Summary of Evaluation:

Teaching: Dr. O'Dwyer has been actively involved in teaching and mentoring throughout his training and career. In the clinical setting, Dr. O'Dwyer is significantly involved in the mentorship of pulmonary medicine fellows as a staff physician in their clinic. He also attends the inpatient pulmonary medicine consultation service, where he teaches fellows, residents, and medical students the inpatient management of complex pulmonary diseases. Within his laboratory, Dr. O'Dwyer currently mentors a medical student, an internal medicine resident, an undergraduate microbiology student, a School of Public Health Masters student, a research technician, and a bioinformatician. Moreover, he has been actively involved in dissertation committees and research advisory committees. He is also involved in peer education, giving invited institutional talks both within and outside the Division of Pulmonary Medicine. Examples include his instruction of the core clinical curriculum seminar for Pulmonary Medicine, discussing key progress in the management of pulmonary complications post hematopoietic cell transplantation (HCT), and invited core clinical curriculum seminars in the Division of Rheumatology, presenting key diagnostic and management issues in connective tissue disease-associated interstitial lung disease (CTD-ILD).

Research: Dr. O'Dwyer has established himself as a national and international leader in the field of pulmonary fibrosis, specifically in the relationship between toll-like receptor (TLR) signaling and lung microbiota in patients with pulmonary fibrosis. His current work is focused on understanding interactions between monocytes, regulatory T cells, and gut microbiota in pulmonary fibrosis. Basic and translational studies in this area were funded by the National Institutes of Health with a previous R56 award and a recently funded R01 award. The R01 award will facilitate the largest study of gut microbiota undertaken to date in patients with chronic lung disease. It is expected that findings from this research will cause a significant shift in the pathogenesis of IPF and provide a platform for further mechanistic studies. Dr. O'Dwyer is also actively involved in serval ongoing and productive research collaborations with faculty in the Department of Microbiology and Immunology, and the Department of Molecular, Cellular, and Developmental Biology, among others. He has published 45 peer-reviewed publications in leading industry journals, including the *American Journal of Respiratory and Critical Care Medicine* and the *American Journal of Physiology-Lung Cellular and Molecular Physiology*. Dr. O'Dwyer's 2018 manuscript in the *American Journal of Respiratory and Critical Care Medicine* was

a seminal study that demonstrated that microbiomes modulate the immune response to viral infection following hematopoietic stem-cell transplant, and a subsequent manuscript published in 2019 in the *American Journal of Respiratory and Critical Care Medicine* was the first to establish evidence for a causal role of the lung microbiome contributing to the development of pulmonary fibrosis.

Recent and Significant Publications:


Lipinski JH, Erb-Downward JR, Huffnagle GB, Flaherty KR, Martinez FJ, Moore BB, Dickson RP, Noth I, O'Dwyer DN, "Toll-Interacting Protein and Altered Lung Microbiota in Idiopathic Pulmonary Fibrosis," *Am J Respir Crit Care Med* 2022. PM35446241

Lipinski JH, Falkowski NR, Huffnagle GB, Erb-Downward JR, Dickson RP, Moore BB, O'Dwyer DN, "Toll-like receptors, environmental caging and lung dysbiosis," *Am J Physiol Lung Cell Mol Physiol* 2021 Aug 1; 321(2):L404-L415: doi: 10.1152/ajplung.00002.2021, 2021. PM34159791

O'Dwyer DN, Ashley SL, Gurczynski SJ, Xia M, Wilke C, Falkowski NR, Norman KC, Arnold KB, Huffnagle GB, Salisbury ML, Han MK, Flaherty KR, White ES, Martinez FJ, Erb-Downward JR, Murray S, Moore BB, Dickson RP, "Lung Microbiota Contribute to Pulmonary Inflammation and Disease Progression in Pulmonary Fibrosis," *Am J Respir Crit Care Med* 2019 Feb 21: 10.1164/rccm.201809-1650OC, 2019. PM30789747

Dickson RP, Huffnagle GB, Flaherty KR, White ES, Martinez FJ, Erb-Downward JR, Moore BB, O'Dwyer DN, "Radiographic Honeycombing and Altered Lung Microbiota in Patients with Idiopathic Pulmonary Fibrosis," *Am J Respir Crit Care Med* 200(12): 1544-1547, 2019. PM31419390/PMC6909839

O'Dwyer DN, Zhou X, Wilke CA, Xia M, Falkowski NR, Norman KC, Arnold KB, Huffnagle GB, Murray S, Erb-Downward JR, Yanik GA, Moore BB, Dickson RP, "Lung Dysbiosis, Inflammation, and Injury in Hematopoietic Cell Transplantation." *Am J Respir Crit Care Med* 198(10): 1312- 1321, 2018. PM29878854/PMC6290939


Service: Dr. O'Dwyer is an outstanding clinician who provides care to patients with a range of pulmonary conditions. In addition to providing outstanding patient care, he is actively involved in service. Nationally, he has served as an associate editor for *BMC Pulmonary Medicine* and serves as an ad-hoc peer reviewer for multiple leading academic journals, including the *British Medical Journal*, the *American Journal of Respiratory and Critical Care Medicine* and the *Journal of Clinical Investigation*. Dr. O'Dwyer is an active member of numerous national and international organizations, including the European Respiratory Society, the American Association for the Advancement of Science, and the American Thoracic Society (ATS), serving as a member of the ATS Lung Microbiome Working Group. His expertise and dedication to service are evidenced by his participation on a study section panel for the National Institute of Allergy and Infectious disease (NIAID). In recognition of his leadership and expertise, he was named the 2020 recipient of the Martin E Galvin Pulmonary Fibrosis Award at the University of Michigan and the 2018 recipient of the Early Career Investigator Award at the International Colloquium on Lung and Airway Fibrosis.

External Reviewers:

Reviewer A: "The quality, quantity, focus and scholarly importance of Dr. O'Dwyer's contributions are superb. His body of work has defined the connection between the lung microbiome and fibrotic lung pathology in both animal models and patients with IPF…Dr. O'Dwyer compares favorably to his peer group of clinically active, pulmonary fibrosis-focused physician-scientists of the same seniority."

Reviewer B: "Dr. O'Dwyer has made substantial commitments in service of both his institution and the field of lung biology. He has participated as a grant reviewer for several national/international funding agencies. He has been a frequent peer-reviewer for high-impact journals including Lancet

Respiratory Medicine, Science Translational Medicine, the Journal of Clinical Investigation, and numerous others. Since 2017, he has served as an Associate Editor for BMC Pulmonary Medicine. He is also an active member of the American Thoracic Society Lung Microbiome Working Group. Overall, Dr. O'Dwyer has demonstrated a strong track record of service."

Reviewer C: "David is a key member of the pulmonary research community both at the University of Michigan and beyond. His research focus and productivity, continued federal funding and professional service clearly demonstrate that he meets the metrics for promotion to Associate Professor…He has made valuable contributions to the integrative fields of airway microbiome and innate immunity in the context of pulmonary fibrosis that have gained him recognition on the national front."

Reviewer D: "Our understanding of the specific mechanisms that determine development and progression of pulmonary fibrosis is also quite limited. Dr. O'Dwyer and his colleagues have made major contributions to advance this understanding by identifying an association between changes in the burden and composition of the lung microbiota and the course of pulmonary fibrosis in murine models of human disease…it is evident that Dr. O'Dwyer is a very effective mentor and teacher. In his review activities and his efforts in work groups he provides important service to the scientific community."

Reviewer E: "Dr. O'Dwyer is a productive clinical investigator who, on the basis of his success at obtaining NIH funding and his growing list of publication[s], is on the ascent. Combining clinical work, particularly in the critical care arena, with laboratory and clinical research is challenging, making Dr. O'Dwyer's accomplishments quite remarkable."

Summary of Recommendation:
Dr. O'Dwyer has made substantive and meaningful contributions to the field in his research work. He is an outstanding physician-scientist who studies pulmonary fibrosis, with additional contributions to teaching and service. I am pleased to recommend David O'Dwyer, M.B., BC.h., BAO, Ph.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