

PROMOTION RECOMMENDATION
THE UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF INTERNAL MEDICINE
DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY

Vincent B. Young, M.D., Ph.D., associate professor of internal medicine, with tenure, Department of Internal Medicine, and associate professor of microbiology and immunology, without tenure, Department of Microbiology and Immunology, Medical School, is recommended for promotion to professor of internal medicine, with tenure, Department of Internal Medicine, and professor of microbiology and immunology, without tenure, Department of Microbiology and Immunology, Medical School.

Academic Degrees:

Ph.D.	1992	Stanford University
M.D.	1992	Stanford University
B.S.	1985	Massachusetts Institute of Technology

Professional Record:

2010-present	Associate Professor of Microbiology and Immunology, University of Michigan
2010-present	Associate Professor of Internal Medicine, University of Michigan
2008-2010	Assistant Professor of Microbiology and Immunology, University of Michigan
2007-2010	Assistant Professor of Internal Medicine, University of Michigan
2001-2007	Assistant Professor, Michigan State University
1999-2000	Instructor, Harvard Medical School

Summary of Evaluation:

Teaching: As a large part of Dr. Young's career has focused on the application of basic science research for the improvement of clinical practice, participating in the training of students at all levels has been important to him. His teaching activities range from the training he provides to his graduate students, post-doctoral fellows and clinical fellows within his research laboratory to the classroom work he performs in the undergraduate setting. He provides clinical training in infectious diseases to medical students, residents, and fellows at the VA Ann Arbor Health System and, since 2003, Dr. Young has been an instructor in the Online Master of Science in Food Safety Program administered by the National Food Safety and Toxicology Center and Michigan State University. In this capacity, he developed and revised a curriculum that is taught via an interactive website. Additionally, Dr. Young has mentored several graduate students as well as post-doctoral fellows. Four of these fellows have gone on to junior faculty positions at other universities.

Research: During his time as an associate professor, Dr. Young has continued to establish a productive, successful and innovative research program. One key facet of microbiome research is that it lends itself to an interdisciplinary, team science approach. Dr. Young has embraced this and the vast majority of his research funding has been in the form of large, multi-investigator grants. The sum total of his research funding (over \$28 million to date) reflects the large awards that are required in order to conduct research that often combines investigators with expertise in fields as varied as microbiology, ecology, evolution, clinical medicine, mathematics, and computer science. Since his appointment as an associate professor, Dr. Young's work has formed the basis for 81 peer-reviewed publications out of a total of 116 for his entire scientific career. His publications have been cited a total of 2,763 times, with an average 18.18 cites per article and at least 100 citations a year for the past five years. This citation rate gives Dr. Young an h-index of 30.

Recent and Significant Publications:

Reeves AE, Koenigsnecht MJ, Bergin IL, Young VB: Suppression of *Clostridium difficile* in the gastrointestinal tracts of germfree mice inoculated with a murine isolate from the family Lachnospiraceae. *Infect Immun* 80:3786-3794, 2012.

Young VB, Raffals LH, Huse SM, Vital M, Dai D, Schloss PD, Brulec JM, Antonopoulos DA, Arrieta RL, Kwon JH, Reddy KG, Hubert NA, Grim SL, Vineis JH, Dalal S, Morrison HG, Eren AM, Meyer F, Schmidt TM, Tiedje JM, Chang EB, Sogin M: Multiphasic analysis of the temporal development of the distal gut patients following ileal pouch anal anastomosis. *Microbiome* 1:9, 2013.

Theriot CM, Koenigsnecht MJ, Carlson PE, Jr., Hatton GE, Nelson AM, Li B, Huffnagle GB, J ZL, Young VB: Antibiotic-induced shifts in the mouse gut microbiome and metabolome increase susceptibility to *Clostridium difficile* infection. *Nature communications* 5:3114, 2014.

Seekatz AM, Aas J, Gessert CE, Rubin TA, Saman DM, Bakken JS, Young VB: Recovery of the gut microbiome following fecal microbiota transplantation. *mBio* 5(3), 2014.

Leslie JL, Huang S, Opp JS, Nagy MS, Kobayashi M, Young VB, Spence JR: Persistence and toxin production by *Clostridium difficile* within human intestinal organoids result in disruption of epithelial paracellular barrier function. *Infect Immun* 83:138-145, 2015.

Service: Dr. Young recently completed a term as a member of the NIH Gastrointestinal Mucosal Pathobiology (GMPB) study section. He previously served on the microbiology grant review panels for the American Heart Association and has also served on several NIH ad hoc preview panels, Canadian panels, and private foundation panels reviewing various research proposals. Dr. Young is an associate editor for the American Society for Microbiology journal, *Infection and Immunology*. He has served as an ad hoc reviewer for multiple manuscripts on host associated microbial ecology and bacterial pathogenesis for several different journals. At the local level, Dr. Young is a co-director of the Host Microbiome Initiative which is part of the medical school's FastForward Initiative. He has served on the Awards and Promotion committee

for the Department of Microbiology and Immunology, reviewed multiple local grants and is a member of the MICHR Pilot Program review committee.

Dr. Young continues to maintain board certification in the field of infectious diseases. He serves as an attending physician on the infectious disease consultation service at the VA Ann Arbor Health System. As his research focuses on hospital-acquired infections, maintaining his activity in clinical infectious diseases is very important not only for his educational mission but for his research mission as well.

External Reviewers:

Reviewer A: “He has emerged as one of the country’s top five experts in *C. difficile* infections, and now co-authors the chapter in the leading textbook (PPID) in the field (ID)...he...is leading the Human Microbiome Initiative (HMI) at Michigan. This is a major internal program, funded by the Michigan Fast Forward program to build critical mass and take a national leadership position in an emerging field....It already is bearing fruit, and likely to be a powerhouse in years to come.”

Reviewer B: “Vince has become one of the leaders in research on how antibiotic treatment affects gastrointestinal microbial community structure and influences the success of pathogens like *C. difficile*....Overall, it is hard not to be impressed with Vince as a faculty member. He is now an established mentor of postdocs and graduate students. His work on modulation of the intestinal microbiota and resistance to *C. difficile* is being published in well-recognized journals, he has partnered in an extraordinary number of productive collaborations, and he has an outstanding track record of research funding.”

Reviewer C: “Without question his work on the microbiology and pathogenesis of enteric infections has resulted in several seminal advances....In particular, his recent work toward defining the microbiota that provide protection against *C. difficile* infections is seminal and of great importance in this very difficult disease, which poses an increasing threat, especially among the elderly.”


Reviewer D: “If one were to ask just about any major ‘player’ in the field of the human microbiome who is the go-to authority on dynamics of *C. difficile* in health and disease, the answer would be Vince Young....He is widely known both nationally and internationally for creative, rigorous and thorough research contributions....U Michigan has had the foresight to see that studies of the microbiome have the potential to revolutionize biomedicine and Vince has been essential in realizing this important new direction. Other universities are now catching on, but Michigan is certainly leading the way for the nation.”

Reviewer E: “Vincent Young is a leader in the field of microbiota-mediated defense against intestinal infection. His publication record is outstanding and features many papers that are considered seminal. He has been extra-ordinarily successful at obtaining funding for his work. He is a respected physician scientist who openly shares his enthusiasm and insights with his fellow academic colleagues....the University of Michigan Medical School is very fortunate to have this remarkable academician in their midst...”

Reviewer F: “In the context of Dr. Young’s scholarly niche and rank among peers national/international, I find his credentials as exceptional and unique and rate him in the **top 5%** of comparably trained Associate Professor faculty....I will also note that Dr. Young seems well positioned to assume a significant leadership position in any Medical School department he chooses to join.”

Summary of Recommendation:

Dr. Young is an exceptional researcher, teacher and clinician. His peers regard him as a national and international expert in the field that he helped to pioneer, the role of the microbiome in resistance to *Clostridium difficile* infection. It is for these reasons that I enthusiastically recommend Vincent B. Young, M.D., Ph.D. for promotion to professor of internal medicine, with tenure, Department of Internal Medicine, and professor of microbiology and immunology, without tenure, Department of Microbiology and Immunology, Medical School.



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

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