Approved by the Regents
May 15, 2008

PROMOTION RECOMMENDATION

The University of Michigan
School of Public Health
Department of Environmental Health Sciences

Peter Mancuso, assistant professor of environmental health sciences, Department of Environmental Health Sciences, School of Public Health, is recommended for promotion to associate professor of environmental health sciences, with tenure, Department of Environmental Health Sciences, School of Public Health.

Academic Degrees:

Ph.D.	1996	University of Tennessee, Physiology, Knoxville, TN
M.S.	1987	University of Tennessee, Food Science, Knoxville, TN
B.S.	1985	Purdue University, Food Science, West Lafayette, IN

Professional Record:

2000-Present	Assistant Professor, Department of Environmental Health Sciences, School of Public Health, University of Michigan
1997-1999	Postdoctoral Research Fellow, Division of Pulmonary and Critical Care Medicine, University of Michigan Medical Center, Ann Arbor, MI
1990-1996	Graduate Research and Teaching Assistant, University of Tennessee, Knoxville, TN
1987-1990	Food Scientist and Research Food Scientist, Ragu Foods Company, Shelton, CT

Summary of Evaluation:

Teaching: Professor Mancuso has carried a full teaching load since beginning as assistant professor in January of 2000 and has an excellent track record as an educator, both inside the classroom as well as the laboratory. He has taught courses on Nutrition in Chronic Disease, Advanced Nutrition Science, Food Science, Food Safety Management, Occupational Toxicology, Principles of Physiology, and Environment and the Immune Response. Professor Mancuso's performance in the classroom for courses in which he had ≥50% responsibility has yielded very solid student evaluations, with Q1 scores ranging from 3.74 to 4.94 and Q2 scores ranging from 3.5 to 5.0. His average Q1/Q2 scores for all courses was 4.13/4.19; for courses excluding non-resident student courses was 4.24/4.29; and for all courses in the last two years was 4.59/4.68, denoting excellent to outstanding reviews for both his courses and his performance and excellent maturation as an instructor. In terms of mentorship, doctoral students were not easily available to Professor Mancuso due, in part, to the suspension of a formal Ph.D. program in Human Nutrition; however, he is currently the primary mentor for a Ph.D. candidate in Toxicology and has served on or is currently a member of seven dissertation committees including one committee for a student in the Department of Microbiology and Immunology in the School of Medicine. Professor Mancuso has also supervised the research projects of 22 Master's students in Human Nutrition, Toxicology, and Molecular and Hospital Epidemiology.

Research: Professor Mancuso has become a nationally prominent expert on the role of proinflammatory mediators associated with lipid status and lipid metabolism on host defense in models of bacterial pneumonia and their role in chronic inflammatory diseases. This theme has important ramifications for human nutrition as well as the impact of toxicants on the lung. A major focus of his research is leptin, an adipokine produced by fat cells that has the ability to regulate energy homeostasis and serve as a proinflammatory cytokine. Professor Mancuso reasoned that this adipokine might play an important role in pulmonary host defense and subsequently went on to successfully test this hypothesis in a murine model using wild type and leptin-deficient (*ob/ob*) mice. He was the first to observe that leptin levels

increase in the lungs and blood following intratracheal bacterial challenge and that leptin-deficient mice exhibit impaired alveolar macrophage function, reduced lung leukotriene synthesis, impaired bacterial clearance, and increased mortality. The provision of exogenous leptin restored these defects in vitro. Professor Mancuso's laboratory subsequently demonstrated impaired phagocytosis by neutrophils in leptin-deficient animals and the beneficial effect of leptin on bacterial defense mechanisms of fasting mice. This latter work suggests a potential role for adipokine as a therapeutic agent in the energy-deprived immunocompromised host, prompting two of the world's leading authorities in bacterial pneumonia, Drs. Salman Khan and Jay Kolls of the University of Pittsburgh, to write an editorial highlighting the work's significance that accompanied his paper in the leading pulmonary journal, the *American Journal of Respiratory and Critical Care Medicine*. Most recently, Professor Mancuso has begun examining how airborne particulates, polycyclic aromatic hydrocarbons, and environmental cigarette smoke may impact on pulmonary host defense mechanisms. Finally, his research portfolio has been identified as a central component of a major multi-disciplinary research program in Human Nutrition and the Environment being planned by Dr. Karen Peterson, who was successfully recruited to a senior faculty position in EHS. Professor Mancuso has published 25 journal articles in the peer-reviewed literature. He is the Principal Investigator (PI) of a current R01 grant from NIH to study "Regulation of Pulmonary Host Defense by Leptin" ($1,250,000 in DC; 2006-2010), PI of a research contract to study the effect a leukotriene B4 agent on a mouse model of pneumonia, and is a co-investigator and receives support from two other grants.

Recent and Significant Publications:

Mancuso, P., P. Nana-Sinkam, and M. Peters-Golden. 2001. Leukotriene B_4 augments neutrophil phagocytosis of *Klebsiella pneumoniae*. *Infect Immun* 69:2011-2016.

Mancuso, P, A. Gottschalk, S. M. Phare, M. Peters-Golden, N. W. Lukacs, and G. B. Huffnagle. 2002. Leptin-deficient mice exhibit impaired host defense in gram-negative pneumonia. *J Immunol* 168:4018-4024.

Moore, S. I., G. B. Huffnagle, G.-H. Chen, E. White, and **P. Mancuso**. 2003. Leptin modulates neutrophil phagocytosis of *K. pneumoniae*. *Infect Immun* 71:4182-4185.

Mancuso, P., C. Canetti, A. Gottschalk, P. K. Tithof, and M. Peters-Golden. 2004. Leptin augments alveolar macrophage leukotriene synthesis by increasing phospholipase activity and enhancing group IVC $iPLA_2$ ($cPLA_2g$) protein expression. *Am. J. Physiol. Lung Cell. Mol. Physiol.* 287:L497-L502.

Mancuso, P., G. B. Huffnagle, M. A. Olszewski, J. Phipps, and M. Peters-Golden. 2006. Leptin corrects host defense defects following acute starvation in murine pneumococcal pneumonia. *Am J Respir Crit Care Med* 173:212-218.

Hsu, A., D.M. Aronoff, J. Phipps, D. Goel, and **P. Mancuso**. 2007. Exogenous leptin reconstitutes pulmonary host defense against *S. pneumoniae* in *ob/ob* mice by restoring alveolar macrophage phagocytosis and neutrophil killing. *Clin Exp Immunol.* 150:332-339.

Service: Professor Mancuso has served on the NIH Study Section on Lung Cell and Molecular Immunology and reviewed manuscripts for 18 different scientific journals during the past seven years. He has served on the American Thoracic Society Assembly on Microbiology, Tuberculosis, and Pulmonary Infections program committee since 2002. Internally, Professor Mancuso has served the EHS Department as chair of the Student and Alumni Affairs Committee, a member of the Curriculum Committee, the Student Admissions & Recruitment Committee, and the Executive Committee, and a member of three faculty search committees that successfully recruited two new assistant professors and most recently, a professor. More broadly, Professor Mancuso has served SPH through his membership on the Public Health Genetics Interdepartmental Concentration executive committee and various ad-hoc committees.

External Reviewers:

Reviewer A: "...his R01 is for a substantial amount ($1,250,000)...he has a substantial grant from Sweden and is Co-PI on two other R01's...this accomplishment alone must put Dr. Mancuso somewhere in the upper 5-10% of investigators [of his cohort] in the nation."

Reviewer B: "The conceptual framework he has developed to link obesity, asthma, and osteoarthritis through leptin-stimulated pathways is exciting."

Reviewer C: "Dr. Mancuso has made outstanding contributions to our understanding of the impairment in innate immune responses against bacterial infections that arise from energy malnutrition...He has clearly attained national recognition for his work."

Reviewer D: "I feel certain that Dr. Mancuso meets all of the criterion for academic tenure at the University of Illinois...because of his success in extramural funding, the impact and extent of his scientific publications, strong evidence for excellent teaching and mentorship, and demonstration of National recognition."

Reviewer E: "He is a creative and insightful scientist who is an emerging leader in the field of lung host defense pathobiology, with a high level of accomplishment and creativity evidenced in his novel work on leptin. I would consider him among the top 10% in his peer group of scientists working on these topics today."

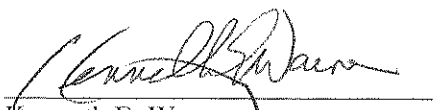
Reviewer F: "He would clearly merit promotion at [my institution] and I support his promotion with the highest degree of enthusiasm."

Reviewer G: "I have in all respect been extremely impressed by the career development, national visibility, and tremendous potential of Dr. Mancuso...His work promises to unlock important mysteries and therapeutic potentials for lung infections in large populations of the U.S. public."

Reviewer H: "His research productivity, the quality and innovative nature of his work, and communications published in peer-reviewed journals are outstanding."

Summary of Recommendation:

Professor Mancuso has become a nationally prominent and productive lung biology scientist conducting innovative research in an area at the intersection of nutrition, obesity, inflammation, lung biology, and immunology. He is an excellent teacher and mentor and makes important contributions to both external and internal service. It is with the support of the School of Public Health Executive Committee that I recommend Professor Peter Mancuso for promotion to associate professor of environmental health sciences, with tenure, Department of Environmental Health Sciences, School of Public Health.



Kenneth E. Warner
Dean, School of Public Health

May 2008