

PROMOTION RECOMMENDATION
UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF HUMAN GENETICS
DEPARTMENT OF BIOSTATISTICS
DEPARTMENT OF ECOLOGY AND EVOLUTIONARY BIOLOGY

Approved by the Regents
May 14, 2009

Noah A. Rosenberg, Ph.D., assistant professor of human genetics, Department of Human Genetics, Medical School, assistant professor of biostatistics, Department of Biostatistics, School of Public Health, and assistant professor of ecology and evolutionary biology, Department of Ecology and Evolutionary Biology, College of Literature, Science, and the Arts, is recommended for promotion to associate professor of human genetics, with tenure, Department of Human Genetics, Medical School, associate professor of biostatistics, without tenure, Department of Biostatistics, School of Public Health, and associate professor of ecology and evolutionary biology, without tenure, Department of Ecology and Evolutionary Biology, College of Literature, Science, and the Arts [also being promoted to research associate professor, Center for Computational Medicine and Biology, and research associate professor, Life Sciences Institute].

Academic Degrees:

Ph.D.	2001	Stanford University
M.S.	1999	Stanford University
B.A.	1997	Rice University

Professional Record:

2006-present	Assistant Professor of Ecology and Evolutionary Biology, University of Michigan
2005-present	Assistant Professor of Human Genetics, University of Michigan
2005-present	Assistant Professor of Biostatistics, University of Michigan
2005-present	Research Assistant Professor of Computational Medicine and Biology, University of Michigan
2005-present	Research Assistant Professor in the Life Sciences Institute, University of Michigan
2004-2005	Senior Research Associate, Department of Biological Sciences, University of Southern California
2002-2004	Research Associate, Department of Biological Sciences, University of Southern California
2001-2002	Research Scientist, Department of Biological Sciences, University of Southern California

Summary of Evaluation:

Teaching: Dr. Rosenberg has participated in didactic teaching for four different departments: Human Genetics (HG 541, 544, 632), Bioinformatics (BI 526, 527), Biostatistics (Biostat 664, 830), and Biology (Life Sciences Institute/BA518). One of these courses, Biostat 830, was newly developed by Dr. Rosenberg and a junior faculty member in biostatistics, Dr. Sebastian Zoellner. His teaching evaluations are above average. He is highly sought after for teaching at other institutions including the Mathematical and Theoretical Biology Institute at Arizona State University, Camp Evolution at Ben Gurion University in Israel, and Murdoch University in Australia. He has mentored five postdoctoral fellows, six graduate students, including an M.D./Ph.D. student, and four undergraduates. Four of his trainees already hold faculty positions.

Research: Dr. Rosenberg's research addresses problems in evolutionary biology and human genetics through a combination of mathematics, computer modeling, development of statistical algorithms, and inference from population-genetic data. In the area of human population relationships and evolutionary history, Dr. Rosenberg has characterized human genetic diversity and used human genetic variation to make inferences about human evolution. He has applied population-genetic principles to the statistical design of studies that seek to identify disease genes. Finally, he has carried out mathematical and statistical modeling of the effects of evolutionary processes on patterns of genetic variation, used mathematical analysis of genealogical descent in closely related species, and developed phylogenetic inference algorithms.

Dr. Rosenberg has achieved an international reputation for his research. He has a record of continuous funding as a principal investigator and as a collaborator. He secured an NSF grant as principal investigator and renewed it. He received his first NIH R01 grant for nearly one million direct cost dollars and five years on the first attempt. In addition, he is a key co-investigator on two other NIH grants, and the PI on six smaller grants. He has 50 peer-reviewed publications, many in top tier journals like *Science* and *Nature*, highly cited, and selected for extensive news coverage. Twenty-five of these papers have been published in 2006-2008 alone, and he is the first or senior author on 22 of those 25. This outstanding level of productivity follows strong productivity as a Ph.D. student at Stanford and research scientist/research associate at USC. He has been invited to give 24 presentations, including keynote talks, since becoming an assistant professor at the University of Michigan, including international venues in India, the United Kingdom, and France.

Recent and Significant Publications:

Jakobsson M, Scholz SW, Scheet P, Gibbs JR, VanLiere JM, Fung H-C, Szpiech ZA, Degnan JH, Wang K, Guerreiro R, Bras JM, Schymick JC, Hernandez DG, Traynor BJ, Simon-Sanchez J, Matarin M, Britton A, van de Leemput J, Rafferty I, Bucan M, Cann HM, Hardy JA, Rosenberg NA, Singleton AB: Genotype, haplotype, and copy-number variation in worldwide human populations. *Nature* 451:998-1003, 2008.

Blum MGB, Rosenberg NA: Estimating the number of ancestral lineages using a maximum likelihood method based on rejection sampling. *Genetics* 176:1741-1757, 2007.

Degnan JH, Rosenberg NA: Discordance of species trees with their most likely gene trees. *PLoS Genetics* 2:762-768, 2006.

Rosenberg NA, Mahajan S, Ramachandran S, Zhao C, Pritchard JK, Feldman MW: Clines, clusters, and the effect of study design on the inference of human population structure. *PLoS Genetics* 1:660-671, 2005.

Rosenberg NA: Algorithms for selecting informative marker panels for population assignment. *Journal of Computational Biology* 12:1183-1201, 2005.

Service: Dr. Rosenberg has reviewed grants for six different countries and for the National Science Foundation. He serves as an associate editor of the *American Journal of Human Genetics*, the journal of the American Society of Human Genetics, with an impact factor of 11. His broad, international service is evidence of his international reputation.

External Review:

Reviewer A: “He has an excellent reputation in the field, not only because of the rigor of his work but from the many creative new perspectives he has provided in many areas of human population genetics, theoretical population genetics and phylogenetics. I would regard Noah as a member of a select group of eight or ten population geneticists who are strongly grounded in theory yet are equally excited about analysis of real data and drawing conclusions about real events in the history of human and other populations.”

Reviewer B: “...I regard him as one of the best world-wide, if not actually the best, of his [generation] in the broads [sic] area of his research....A most important feature of his work, and perhaps the main reason why his work has been influential, is its cross-disciplinary nature. His work embraces the fields of human genetics, statistics, computer science, mathematics and genetics generally....I would assess him as being unsurpassed in this intersection activity.”

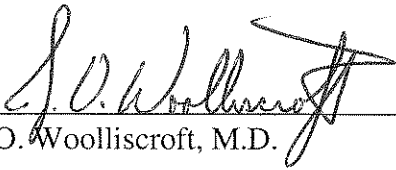
Reviewer C: “...Noah’s research is outstanding and this is a [sic] clear a case for tenure as I have ever seen....Internationally, Rosenberg is among the handful of the best statistical geneticists at any level – Assistant, Associate or Full Professor.”

Reviewer D: “Let me say at the outset that his record warrants tenure/promotion without doubt. I think you are most fortunate to have recruited him in the first place and should do all that you can to retain him. He is a rising star among statistical geneticists – on par with the best at, or just above, his career stage...and shows every indication of become [sic] an international leader.”

Reviewer E: “...Noah’s work in developing and applying statistical methods in molecular evolution – and particularly the interplay between population genetics and phylogenetics – is world class. He (and those working with him in his group) have pioneered several areas that are both topical and challenging.”

Summary of Recommendation:

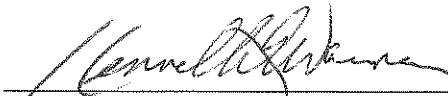
Based on his stellar research achievements in statistical and population genetics, and his unique interdisciplinary niche at the interface of biology and math, we strongly recommend Dr. Noah Rosenberg for promotion to associate professor, with tenure, in the Department of Human Genetics, and associate professor, without tenure, Department of Biostatistics, School of Public Health, and in the Department of Ecology and Evolutionary Biology, College of Literature, Science, and the Arts.



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



Terrence J. McDonald, Ph.D.
Arthur F. Thurnau Professor,
Professor of History, and Dean
College of Literature, Science and the Arts



Kenneth E. Warner, Ph.D.
Dean, School of Public Health

May 2009