BIOGRAPHICAL SKETCH

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NAME: Nutman, Thomas B.

eRA COMMONS USER NAME (credential, e.g., agency login): tnutman

POSITION TITLE: Chief, Laboratory of Parasitic Diseases
Head, Helminth Immunology Section
Head, Clinical Parasitology Section

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Brown University, Providence, RI	A.B.	06/1974	History/Biology
University of Cincinnati, Cincinnati, OH	M.D.	06/1979	Medicine
NYU Bellevue, New York, NY		06/1982	Internal Medicine
NIAID, NIH, Bethesda MD		06/1985	Allergy Imunology Tropical Medicine

Positions and Honors

Positions and Employment

1985-87	Senior Staff Fellow and Attending Physician, LPD, NIAID, NIH
1987-90	Senior Investigator, LPD, NIAID, NIH
1990-present	Senior Investigator (tenured), LPD, NIAID, NIH
1994-1995	Head, Clinical Immunology and Parasitology Section, LPD, NIAID, NIH
1995-present	Head, Helminth Immunology Section, NIAID, NIH
1997- 2009	Head, Clinical Parasitology Unit, LPD, NIAID, NIH
2002-2017	Deputy Chief, Laboratory of Parasitic Diseases, NIAID, NIH
2003- present	Director, NIAID International Center for Excellence in Research (ICER), Chennai, India
2003-present	Director, Filariasis Unit NIAID International Center for Excellence in Research (ICER), Bamako, Mali
2009-present	Head Clinical Parasitology Section, LPD, NIAID, NIH
2010-present	Associate Clinical Professor, Institute of Biomedical Sciences, George Washington University
2017-present	Chief, Laboratory of Parasitic Diseases

Other Experience and Professional Memberships

1986-2006	Editorial Board, Experimental Parasitology
1993-95	Associate Editor, Journal of Immunology
1994-	Editorial Board, American Journal of Tropical Medicine and Hygiene
1995-2000	Section Editor, Journal of Immunology
2014-	Associate Editor, PLoS Pathogens
2014-	Editorial Board, Current Tropical Medicine Reports
2016-	Associate Editor, ImmunoHorizons
2008-2011	Member, Scientific Advisory Board QDDP-Genome Canada
2008- 2011	Member, Nominating Committee, American Society of Tropical Medicine and Hygiene
2009- 2012	Member, Scientific Advisory Committee WHO/TDR Drug development and evaluation for helminths and other neglected tropical diseases
2011-2013	Member, WHO Expert Advisory Panel on Parasitic Diseases (Filarial Infections)
2012	Member Life Science Review Panel Deutche Forschungsgemeinschaft (DFG) Excellence Initiative by the German Federal and State Governments

2012-2014	Chairperson, Safety Monitoring Committee -- Controlled human malaria infection after immunization with cryopreserved Plasmodium falciparum sporozoites under chloroquine prophylaxis (TIP5). Radboud University Nijmegen Medical Nijmegan, NL and Sanaria Inc, Rockville, MD
2013-	Member, Technical Advisory Board, Task Force for Global Health
2012-	Member, Loa loa Scientific Working Group, Mectizan Expert Committee
2013-	Member, NID STH External Advisory Panel, Bill and Melinda Gates Foundation
2013-2016	Member, WHO Expert Advisory Panel on Parasitic Diseases (Filarial infections)
2014-	Advisor/Member, Macrofilaricide Expert Committee, Bill and Melinda Gates Foundation
2016-2018	Member, WHO Expert Advisory Panel on Parasitic Diseases (Filarial infections)

1974	Member Sigma Xi
1980	Member Physicians for Social Responsibility
1980	Member American College of Physicians
1983	Member, Union of Concerned Scientists
1983	Member, American Society of Tropical Medicine and Hygiene
1983	Member, American Federation of Clinical Research
1985	Member, American Association for the Advancement of Science
1987	Member, American Academy of Allergy and Immunology
1987	Member, American Association of Immunologists
1989	Member, Infectious Diseases Society of America
1990	Member, Clinical Immunology Society
1993	Member, American Society of Clinical Investigation
1996	Fellow, Infectious Diseases Society of America
1999	Member, American Society of Microbiology
1999	Fellowship, Royal Society of Tropical Medicine and Hygiene
2011	Fellow, American Association for the Advancement of Science
2012	Fellow, American Society of Tropical Medicine and Hygiene
2014	Fellow, American Academy of Microbiology
2014	Member, American Association of Physicians (AAP)

Honors

Robert A. Hyndmann Traveling Fellowship (1976)
National Heart and Lung Institute Pulmonary Academic Award (1978)
Bogen Research Award (1979)
Glorney-Raisback Fellowship from the New York Academy of Medicine (1982)
UnitedStates Public Health Service Achievement Medal (1989)
United States Public Health Service Commendation Medal (1991)
United States Public Health Service Outstanding Service Medal (1996)
Bailey K. Ashford Medal from the American Society of Tropical Medicine and Hygiene (2000)
United States Public Health Service Unit Commendation Medal (2002)
United States Public Health Achievement Medal (2005)
Physicians Professional Advisory Committee (PPAC) to the Surgeon General -
Physician Researcher of the Year (2007)
NIH Director's Ruth L. Kirchstein Mentoring Award (2010)
AAAS Fellow (2011)
Fellow, American Academy of Microbiology (ASM-2014)
American Association of Physicians (AAP-2014)

C. Contribution to Science (past 2 years)

My research has broadly examined the regulation of the host immune response to parasitic helminth infection (primarily *Wuchereria bancrofti*, *Loa loa, Onchocerca volvulus*, and the soil transmitted helminths) of global importance and their influence on the expression of non-parasitic infections and atopy. My research focuses on both the host response to helminth infection and the molecular basis for parasitism in helminths and the prototypical responses they induce. Much of my recent work involves the analysis of host-parasite interaction that includes:

1) **functional mapping of the earliest host-parasite interaction that influences the polarized immune responses that are the hallmarks of these infections;**
    a. Boyd, A, JM Ribeiro, and TB Nutman. 2015. Human CD117 (cKit)+ Innate Lymphoid Cells Have a Discrete Transcriptional Profile at Homeostasis and Are Expanded during Filarial Infection. *PLoS One* 9:e108649.
    b. Cotton, R.N., R. McDonald-Fleming, A. Boyd, K. Spates, T.B. Nutman, and R. Tolouei Semnani. 2015. Brugia malayi infective larvae fail to activate Langerhans cells and dermal dendritic cells in human skin. *Parasite Immunol* 37:79-91.
    c. Boyd, A., K. Killoran, E. Mitre, and T.B. Nutman. 2015. Pleural cavity Type 2 innate lymphoid cells precede Th2 expansion in murine *Litomosoides sigmodontis* infection. *Exp Parasitol* 59:118-26.

2) **genomic and proteomic definition of the filarial parasites to identify parasite-encoded therapeutic, diagnostic, and vaccine-related targets**;
    a. O'Connell, E.M., and T.B. Nutman. 2016. Molecular Diagnostics for soil-transmitted helminths. *Am J Trop Med Hyg* 95:508-513.
    b. Cotton, J.A., S. Bennuru, A. Grote, B. Harsha, A. Tracey, R. Beech, S.R. Doyle, M. Dunn, J.C. Hotopp, N. Holroyd, T. Kikuchi, O. Lambert, A. Mhashilkar, P. Mutowo, N. Nursimulu, J.M. Ribeiro, M.B. Rogers, E. Stanley, L.S. Swapna, I.J. Tsai, T.R. Unnasch, D. Voronin, J. Parkinson, T.B. Nutman, E. Ghedin, M. Berriman, and S. Lustigman. 2016. The genome of Onchocerca volvulus, agent of river blindness. *Nat Microbiol* 2:16216.
    c. Bennuru, S., Cotton, J.A., Ribeiro, J.M.C., Grote, A., Harsha, B., Holroyd, N., Mhashilkar, A. Molina, D.M., Randall, A.Z., Shandling, A.D.,' Thomas T.R., Ghedin, E., Berriman, M., Lustigman, S., and T.B. Nutman Comprehensive transcriptome and proteome analyses define stage-specific processes and novel biomarkers in the filarial parasite *Onchocerca volvulus mBio* 7: e02028-16.
    d. Bennuru, S., S. Lustigman, D. Abraham, and T.B. Nutman. 2017. Metabolite profiling of infection-associated metabolic markers of onchocerciasis. *Mol Biochem Parasitol* 23:160-162.
    e. Norice-Tra, C.T., J. Ribeiro, S. Bennuru, M.P. Fay, R. Tyagi, M. Mitreva, and T.B. Nutman. 2017. Insights into *Onchocerca volvulus* population biology through multilocus immunophenotyping. *J Infect Dis* 216:736-743.

3) **studies of pathogenesis underlying disease manifestations (e.g., elephantiasis) in filarial infections;**
    a. Herrick, JA, S Metenou, MA Makiya, CA Taylar-Williams, MA Law, AD Klion, and TB Nutman. 2015. Eosinophil-associated processes underlie differences in clinical presentation of loiasis between temporary residents and those indigenous to loa-endemic areas. *Clin Infect Dis* 60:55-63.
    b. Anuradha R, Munisankar S, Dolla C, Kumaran P, Nutman TB, Babu S, 2016. Modulation of CD4+ and CD8+ T-Cell Function by Interleukin 19 and Interleukin 24 During Filarial Infections. J Infect Dis 213: 811-5.
4) **studies of immunologic bystander effects of chronic helminth infection on non-parasitic infections (HIV, tuberculosis, malaria), atopy, and autoimmune diseases;**
    a. Clark, C.E., M.P. Fay, M.E. Chico, C.A. Sandoval, M.G. Vaca, A. Boyd, P.J. Cooper, and T.B. Nutman. 2016. Maternal helminth infection is associated with higher infant immunoglobulin A titers to antigen in orally administered vaccines. *J Infect Dis* 213:1996-2004.
    b. Gazzinelli-Guimaraes, P.H., S. Bonne-Annee, R.T. Fujiwara, H.C. Santiago, and T.B. Nutman. 2016. Allergic sensitization underlies hyperreactive antigen-specific CD4+ T cell responses in coincident filarial infection. *J Immunol* 197:2772-2779.
    c. Babu, S., and T.B. Nutman. 2016. Helminth-tuberculosis co-infection: an immunologic perspective. *Trends Immunol* 37:597-607.
    d. Chatterjee, S., K.R. Talaat, E.E. van Seventer, C.G. Feng, A.L. Scott, A. Jedlicka, A. Dziedzic, T.B. Nutman, P.M. Drame, S. Bennuru, and T.B. Nutman. 2017. Mycobacteria induce TPL-2 mediated Il-10 in IL-4-generated alternatively activated macrophages *PLoS One* 12: e0179701.

5) **regulation of IgE and eosinophilia in the context of human helminth infections**
    a. Santiago Hda, C, FL Ribeiro-Gomes, S Bennuru, and TB Nutman. 2015. Helminth infection alters IgE responses to allergens structurally related to parasite proteins. *J Immunol* 194:93-100.

b. Nutman, T.B. 2015. Looking beyond the induction of Th2 responses to explain immunomodulation by helminths. *Parasite Immunol* 37:304-13
c. Nutman, T.B. Human infection with Strongyloides stercoralis and other related Strongyloides species. *Parasitology*
d. Santiago, H.C., and T.B. Nutman. 2016. Human helminths and allergic disease: the hygiene hypothesis and beyond. *Am J Trop Med Hyg* 95:746-753.

Complete List of Published Work in MyBibliography:
https://www.ncbi.nlm.nih.gov/myncbi/collections/bibliography/42508924/