
BIOGRAPHICAL SKETCH

NAME Mihai G. Netea, born 25-12-1968	POSITION TITLE Professor of Experimental Medicine Head of the Laboratory of Experimental Internal Medicine, Radboud Univ. Nijmegen Med. Ctr.		
eRA COMMONS USER NAME (credential, e.g., agency login)			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
"Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania	MD	09/93	Medicine
Radboud University Nijmegen, Nijmegen, The Netherlands	PhD	06/98	Immunology
Radboud University Nijmegen, Nijmegen, The Netherlands	ID specialist	01/05	Infectious Diseases
University of Colorado, Denver, USA	Post-doctoral	08/07	Immunology

A. Personal Statement

The goal of my research efforts is to translate information obtained through the assessment of human genetic variation in patients into novel diagnostic and therapeutic approaches. My group has a strong track record on translating genetic information into understanding pathophysiological mechanisms of disease. I have a broad expertise on the host mechanisms responsible for the recognition of bacterial and fungal pathogens and the activation of the innate immune system, on the one hand, and the genetic susceptibility to infections on the other hand. I have described the epigenetic mechanisms mediating innate immune memory (*'trained immunity'*) for the first time.

During the last 7 years I have also been involved in developing several major projects in infection and genetics at the University of Medicine Craiova, Romania, where I hold a professorship position since 2016. In addition, I am visiting professor at the University of Medicine and Pharmacy Cluj-Napoca, Romania. Since 2017 I have also holding a position of professor in immunometabolism at the University of Bonn, where I am developing a research line on functional genomics in human immunology.

B. Positions and Honors

Positions

- Professor of Experimental Medicine, Department of Internal Medicine, Radboud University Nijmegen Medical Centre, The Netherlands (since 2007)
- Professor of Immunometabolism, University of Bonn, Germany (since 2017)
- Professor of Immunology, University of Medicine and Pharmacy Craiova (since 2016)
- Visiting professor, University of Medicine and Pharmacy Cluj-Napoca
- Visiting scientist, Division of Infectious Diseases, University of Colorado Health Sciences Centre, Denver, Colorado, USA, 2005 and 2007
- Internist-infectious diseases specialist, senior staff Department of Internal Medicine, 2006-2007
- Fellow internal medicine/infectious diseases, 2000-2005
- Post-Doc researcher, Department of Internal Medicine, Radboud University Nijmegen Medical Centre, The Netherlands, 1998-2000
- PhD training, Department Internal Medicine, Radboud Univ Nijmegen Medical Centre, The Netherlands, 1994-1998

Honors and awards

- 1997 Institute of Cellular Signaling Nijmegen Award
- 1999 Merck Irving S. Sigal Memorial Award of the American Academy of Microbiology
- 2002 International Sepsis Forum Young Investigator Award
- 2002 Dutch Society for Medical Microbiology Aventis Award
- 2003 Postdoctoral Investigator Award, International Cytokine Society
- 2003 SmithKline Beecham Interscience Conference on Antimicrobial Agents and Chemotherapy Award
- 2005 European Society of Clinical Microbiology and Infectious Diseases Young Investigator Award
- 2005 ICAAC Programme Committee Award in “*Immunology of Infection*”
- 2006 WRO Goslingsprijs of the Infectious Diseases Society of the Netherlands
- 2008 Nijmegen University Center for Infectious Diseases Award
- 2005 Vidi Research Award ZonMW
- 2010 Vici Research Award ZonMW
- 2011 Nijmegen University Center for Infection, Inflammation and Immunity Award
- 2011 Radboud Science Award
- 2012 ERC Consolidator Grant
- 2013 European Society for Clinical Investigation Award for “*Translational Research*”
- 2015 Elected Member of Academia Europaea
- 2016 Jessie Boden Lloyd Visiting Professor of Immunology at the University of Calgary
- 2016 elected member of the Netherlands Royal Academy of Arts and Sciences (KNAW)
- 2016 Spinoza Prize of the Netherlands Organization for Scientific Research
- 2017 Honorary Degree *Honoris Causa* University of Aberdeen
- 2017 elected “ESCMID Fellow”
- 2017 elected Fellow of the Infectious Diseases Society of America (FIDSA)

Publication metrics:

- researcher id N-5155-2014
- *Hirsh*-index factor 90 (Web of Sciences) and 105 (Google Scholar)
- Number of publications 729
- Total number of citations 31016
- ranked nr. 9 in Immunology Research Europe: *Lab Times* 6/2013, Publication Analysis 2005-2011

C. Selected Peer-reviewed Publications

1. Bekkering S, Arts RJW, ... , Stunnenberg H, Riksen NP, **Netea MG**. Metabolic Induction of Trained Immunity through the Mevalonate Pathway. **Cell**. 2018; 172:135-146 (impact factor **28.7**)
2. Mitroulis I, Ruppova K, Wang B, ... , Hajishengallis G, **Netea MG**, Chavakis T. Modulation of Myelopoiesis Progenitors Is an Integral Component of Trained Immunity. **Cell**. 2018; 172:147-161 (**28.7**).
3. Arts RJW, Moorlag SJCFM, Novakovic B, ... , Stunnenberg HG, van Crevel R, **Netea MG**. BCG Vaccination Protects against Experimental Viral Infection in Humans through the Induction of Cytokines Associated with Trained Immunity. **Cell Host Microbe** 2018; 23:89-100 (**13.4**)
4. Ter Horst R, Jaeger M, Smeekens SP, ... , Wijmenga C, Notebaart RA, Joosten LA, **Netea MG**. Host and Environmental Factors Influencing Individual Human Cytokine Responses. **Cell**. 2016;167:1111-1124 (**28.7**)
5. Li Y, Oosting M, Smeekens SP, Jaeger M, ... , Wijmenga C, Kumar V, **Netea MG**. A Functional Genomics Approach to Understand Variation in Cytokine Production in Humans. **Cell**. 2016;167:1099-1110 (**28.7**)
6. Schirmer M, Smeekens SP, Vlamakis H, ... , Wijmenga C, **Netea MG**, Xavier RJ. Linking the Human Gut Microbiome to Inflammatory Cytokine Production Capacity. **Cell**. 2016;167:1125-1136 (**28.7**)
7. **Netea MG**, Joosten LA, Latz E, Mills KH, Natoli G, Stunnenberg HG, O'Neill LA, Xavier RJ. Trained immunity: A program of innate immune memory in health and disease. **Science**. 2016 Apr 22;352(6284):aaf1098 (**31.4**)
8. Cheng SC, Brendon S, ... , van der Poll, **Netea MG**. Broad defects in energy metabolism of leukocytes underlie immunoparalysis in sepsis. **Nature Immunology**, 2016, 17:406-413 (**21.7**)
9. Cheng SC, Quintin J, Cramer RA, ... , Stunnenberg HG, Xavier RJ, **Netea MG**. mTOR/HIF1 α -mediated aerobic glycolysis as metabolic basis for trained immunity. **Science**, 2014, 345: 1250684 (**31.4**)
10. Saeed S, Quintin J, Kerstens HHD, ... , Xavier RJ, Logie C, **Netea MG**, Stunnenberg HG. Epigenetic programming during monocyte to macrophage differentiation and trained innate immunity. **Science**, 2014, 345: 1251086 (**31.4**)
11. Li Y, Oosting M, Deelen P, Ricaño-Ponce I, Smeekens S, Jaeger M, Matzaraki V, Swertz MA, Xavier RJ, Franke L,

- Wijmenga C, Joosten LA, Kumar V, **Netea MG**. Inter-individual variability and genetic influences on cytokine responses to bacteria and fungi. **Nature Medicine**. 2016 Jul 4. doi: 10.1038/nm.4139 (30)
12. Kumar V, Cheng SC, Johnson MD, ... , Xavier RJ, Kullberg BJ, Wijmenga C, **Netea MG**. ImmunoChip SNP array identifies novel genetic variants conferring susceptibility to candidemia. **Nature Commun**, 2014, 5:4675 (10.7)
13. Laayouni H, Oosting M, Luisi P, ... , Joosten LAB, Bertranpetit J, **Netea MG**. Convergent evolution in European and Roma populations: pressure exerted by plague on Toll-like receptors. **Proc Nat Acad Sci USA**, 2014, 111:2668-73 (9.8)
14. Lionakis M, Swamydas M, Fischer B, ... , Gao JL, Kullberg BJ, **Netea MG**, Murphy PM. Chemokine Receptor CX3CR1 Modulates Susceptibility to Systemic Candidiasis in Mice and Humans. **J. Clin. Invest**. 2013; 123(12):5035-51 (13.9)
15. Smeekens SP, Ng A, ... van der Meer JW, Wijmenga C, **Netea MG**, Xavier RJ. Functional genomics identifies type I interferon pathway as central for host defense against *Candida albicans*. **Nat Commun**. 2013;4:1342 (10.0)
16. Kleinnijenhuis J, Quintin J, Preijers F, Joosten L.A.B., Ifrim DC, Saeed S, Jacobs C, van Loenhout J, de Jong D, Stunnenberg HG, Xavier RJ, van der Meer JWM, van Crevel R, **Netea MG**. BCG induces NOD2-dependent non-specific protection to reinfection via epigenetic reprogramming of monocytes. **Proc. Natl. Acad Sci USA** 2012, 17537-42 (9.4)
17. van de Veerdonk FL, Plantinga TS, Hoischen A, Smeekens SP, Joosten LA, Gilissen C, Arts P, Rosentul DC, Carmichael AJ, Smits-van der Graaf CA, Kullberg BJ, van der Meer JW, Lilic D, Veltman JA, **Netea MG**. STAT1 mutations in autosomal dominant chronic mucocutaneous candidiasis. **N Engl J Med**. 2011 Jul 7;365(1):54-61 (47)
18. **Netea MG**, Quintin J, van der Meer JW. Trained immunity: a memory for innate host defense. **Cell Host Microbe**. 19;9:355-61. (13.4)
19. Bart Ferwerda, Gerben Ferwerda, Theo S. Plantinga, ... , Bart-Jan Kullberg, Gordon D. Brown, **Netea MG**. Human dectin-1 deficiency and mucocutaneous fungal infections **N Engl J Med**, 2009, 361;1760-7 (47)
20. **Netea MG**, Gow NA, Munro CA, ... , Van der Meer JW, Brown AJ, Kullberg BJ. Immune sensing of *Candida albicans* requires cooperative recognition of mannans and glucans by lectin and Toll-like receptors. **J Clin Invest**. 2006 Jun;116(6):1642-50. (15.7)

D. Research Support

- 2002-2005 Junior researcher grant** "The role of Toll-like receptors for recognition of *Candida albicans*" (250.000 euro)
- 2004-2009 Vidi Grant of the Netherlands Association for Scientific Research** (600.000 euro).
- 2004-2007 Junior researcher grant** "Pattern recognition receptors in disseminated candidiasis" (250.000 euro)
- 2007-2011 TI-Pharma consortium grant** (500.000 euro).
- 2006-2009 Junior researcher grant** "Adjuvants for *Candida* vaccination" (250.000 euro)
- 2006-2010 Diabetes Fonds grant** "The role of interleukin-18 for glucose metabolism" (250.000 euro)
- 2008-2012 FIN-SysB Marie Curie grant (EU-FP7)**, for "Systems Biology of *Candida albicans*" (500.000 euro)
- 2009-2013 CTMM grant "Molecular Diagnosis and Risk Stratification of Sepsis (MARS)"** (500.000 euro)
- 2009-2012 Junior researcher grant** "Genetic susceptibility to invasive fungal infections" (250.000 euro)
- 2010-2015 Vici Grant of the Netherlands Association for Scientific Research** (1.500.000 euro).
- 2011-2014 AII-FUN research grant (EU-FP7)**, for "Immunology of Fungal Infections" (300.000 euro)
- 2012-2017 ERC Consolidator Grant**, for Systems Biology of Fungal Infections (1.5 million euro)
- 2013-2018 CVON grant**, "Gut microbiota and chronic inflammation as drivers of cardiovascular disease (1.100.000 euro)
- 2015-2019 TOP grant** "The role of cellular metabolism of immune cells for the pathogenesis of sepsis" (337.000 euro)
- 2016-2019 REPROGRAM Horizon 2020 grant**, on the role of trained immunity in cardiovascular diseases (900.000 euro)
- 2016-2020 Spinoza Prize** for research on trained innate immunity (2.500.000 euro)
- 2016-2020 Collaborative Project Romanian Government** for research on genomics in sepsis (2.000.000 euro)
- 2017-2021 HDHL-INTIMIC "Interrelation of the Intestinal Microbiome, Diet and Health"** (400.000 euro)

E. Patents

- EP2076282 – Novel antagonists of the Toll-like receptor 4
- EP6030245 - Novel method for diagnosing Lyme disease using a cellular immunological test (*licensed*)
- EP6031158 – A novel method for diagnosing Q-fever using a cellular immunological test (*licensed*)
- US61/933,716 - Tumor necrosis factor alpha detection in whole blood samples (*licensed*)
- US14/760,604 – Galactosaminogalactan for use in the treatment of at least one inflammatory disease
- Filed nov. 2017 – Targeted nanoimmunotherapy to increase trained immunity

F. Organization of international conferences

- 2010** Frontiers of Science Conference on Pattern Recognition Receptors
- 2010 and 2012** "Candida and Candidiasis Conference", organized by the American Society for Microbiology.
- 2012** "ISHAM 2012", International Society of Human and Animal Mycology
- 2012 and 2013** Summer Frontiers of Science Symposium on Trained Immunity and Immunodeficiencies
- 2015** Gordon Research Conference on the Immunology of Fungal Infection, Galveston, TX
- 2015** Wellcome Trust Conference on Innate Immune Memory, Cambridge, UK

- 2016** Summer Frontiers of Science on “Systems Biology of Innate Immunity”, Nijmegen, the Netherlands
2017 Gordon Research Conference on the Immunology of Fungal Infection, Galveston, TX
2017 Wellcome Trust Conference on Innate Immune Memory, Cambridge, UK
2018 New Frontiers in Innate immunity and Inflammation, Cluj-Napoca, Romania

G. Invited presentations at international conferences in the last 5 years

- 2014 ASM Candida and Candidiasis Conference, New Orleans, USA
2014 European Congress of Clinical Microbiology and Infectious Diseases, Barcelona, Spain
2014 11th Aegean Conference on innate Immunity, Olympia, Greece
2014 European Congress of leukocyte Biology, Vienna, Austria
2014 Society of Leukocyte Biology Congress, Salt Lake City, USA
2014 British Society of Immunology Annual Congress, Brighton, UK
2015 11th International Titisee Conference: Immunometabolism, Titisee, Germany
2015 3rd Belgrade Meeting on Immunoregulation, Belgrade, Serbia
2015 German Society of Pediatric Diseases Congress, Freiburg, Germany
2015 12th Aegean Conference on Innate Immunity, Chania, Greece
2015 ESCMID European Congress Clinical Microbiology and Infectious Diseases, Copenhagen, Denmark
2015 Cold Spring Harbor Conference on Innate Immunity, Cold Spring Harbor, US
2015 4th International Conference on Toll-like receptors, Marbella, Spain
2016 Gordon Conference on Lung Immunology, Galveston, Texas
2016 NextGen Immunology Conference, Tel Aviv, Israel
2016 Gordon Conference on Autophagy, Ventura, California
2016 Keystone Conference on Myeloid Cells, Killarney, Ireland
2016 ESCMID European Congress Clinical Microbiology and Infectious Diseases, Amsterdam
2016 American Thoracic Society Annual Conference, San Francisco, USA
2016 American Society of Microbiology Annual Conference, Boston, USA
2016 Mycoses in AIDS Conference, Cape Town, South Africa
2016 European Association for Diabetes Conference, Munchen, Germany
2016 Innate Immune Society Conference Keynote, Hamburg, Germany
2017 Keystone Symposium on Tumor Metabolism, Whistler, Canada
2017 Keystone Symposium on Metabolism and Immunity, Dublin, Ireland
2017 Gordon Conference on Atherosclerosis, Sunday River, USA
2017 Keystone Symposium on Pattern Recognition Receptors, Banff, Canada
2017 Epigenetics and infections Conference, Paris, France
2017 European Association for Atherosclerosis Conference, Prague, Czech Republic
2017 Cell Symposium on Human Immunity, Banff, Canada
2017 European Shock Society, Paris, France
2017 American Association for Cancer Research, Boston, USA
2018 Keystone Conference on Innate Immunity, Vancouver, Canada
2018 ESCMID European Congress Clinical Microbiology and Infectious Diseases, Madrid
2018 Keystone Conference on Myeloid Cells, Breckenridge, USA
2018 Aegean Conference on Innate Immunity, Crete, Greece
2018 EMBL Innate Immunity Conference, Heidelberg, Germany
2018 International Society Human Animal Mycology, Amsterdam, the Netherlands
2018 7th Global Network Forum on Infection and Immunity, Chiba, Japan
2018 European Congress of Immunology, Amsterdam, the Netherlands