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## BIOGRAPHICAL SKETCH

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NAME Mihai G. Netea, born 25-12-1968	POSITION TITLE Professor of Experimental Medicine		
eRA COMMONS USER NAME (credential, e.g., agency login)	Head of the Laboratory of Experimental Internal Medicine, Radboud Univ. Nijmegen Med. Ctr.		
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	01/06	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, and their role in vaccination, infection, immune-mediated diseases, and cancer.

### 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)
- Scientific Coordinator, International Trained Immunity Consortium (since 2017)
- Scientific Coordinator, Human Functional Genomics Project (since 2014)
- Visiting professor, University of Medicine and Pharmacy Cluj-Napoca (since 2012)
- Visiting scientist, Univ 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)
- 2018 van Loghem Award of the Netherlands Society for Immunology
- 2019 Radboud penning award of the Radboud University Medical Center
- 2019 Visiting Professor of Immunology, University of Pittsburgh, USA
- 2019 ERC Advanced Grant
- 2019 Honorary Degree *Honoris Causa* University of Medicine and Pharmacy Cluj-Napoca, Romania
- 2020 Honorary Degree *Honoris Causa* University of South Denmark, Odense, Denmark
- 2021 Hemersdorf Prize, Radboud University, Nijmegen, the Netherlands
- 2022 Honorary Degree *Honoris Causa* University of Liege, Belgium

#### Publication metrics:

- researcher id N-5155-2014
- ORCID ID 0000-0003-2421-6052
- *Hirsh*-index factor 161 (Web of Sciences) and 188 (Google Scholar)
- Number of publications 1317
- Total number of citations 110679 (Web of Science) and 148898 (Google Scholar)

#### 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 All-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)
- **2016-2025 Spinoza Prize** for research on trained innate immunity (2.500.000 euro)
- **2016-2020 Collaborative Project Romanian Government** for research on genomics in sepsis FUSE (2.000.000 euro)
- **2017-2021 HDHL-INTIMIC “Interrelation of the Intestinal Microbiome, Diet and Health”** (400.000 euro)
- **2018-2022 ITN Funhomics Horizon 2020 grant** on microbiome in fungal infections (400.000 euro)
- **2019-2024 CVON2 grant** “Trained immunity as driver of cardiovascular disease” (1.000.000 euro)
- **2019-2024 ERC Advanced Grant** “Trained Immunity and vaccination” (2.500.000 euro)

**2020-2024 ImmunoSep Horizon 2020 grant**, “Immunotherapy of sepsis” (1.600.000 euro)  
**2020-2024 HDM-FUN Horizon 2020 grant**, “Immunotherapy of fungal infections” (1.800.000 euro)  
**2020-2024 HAP2 Horizon 2020 grant**, “Immunotherapy of pneumonia” (780.000 euro)  
**2019-2029 2000-HIV project** ViiV Healthcare on “Systems biology of HIV” (15.400.000 euro)  
**2020-2022 BCG-PRIME clinical study in COVID19**, “BCG effects on COVID19) (550.000 euro)  
**2021-2023 Nanobiologics for trained immunity** TTxD (200.000 euro)  
**2021-2022 FAST grant** “Immune dysregulation in COVID19” (200.000 euro)  
**2021-2023 Systems biology of influenza and shingrix vaccination** GSK (600.000 euro)  
**2021-2023 ZonMW** “Timing and sequence of vaccination against COVID-19 and Influenza (TACTIC)” (500.000 euro)  
**2022-2025 Tubitak grant** “Epigenetics of refractory IL-1 mediated diseases” (300.000 euro)  
**2023-2026 Baxerna Horizon Europe** “mRNA vaccines for tuberculosis and Acinetobacter” (530.000 euro)  
**2023-2026 ImmuneAgeD PNRR grant** “Genetic and environmental factors influencing immune aging (1.400.000 euro)  
**2024-2028 Homi-lung Horizon Europe** “Post-sepsis cardiovascular complications” (800.000 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  
 US14/760,604 – Galactosaminogalactan for use in the treatment of at least one inflammatory disease  
 US2020/0253884A1 – Nanobiological compositions for promoting trained immunity (*licensed*)  
 US2020/00376146A1 – Nanobiological compositions for inhibiting trained immunity (*licensed*)  
 P6092925PCT - Treatment of ARDS and other parameters related to COVID-19

## 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** Welcome 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** Welcome Trust Conference on Innate Immune Memory, Cambridge, UK  
**2018** New Frontiers in Innate immunity and Inflammation, Cluj-Napoca, Romania  
**2022** Summer Innate Immune Conference, Cluj-Napoca, Romania  
**2022** Keystone Conference Innate Immune Memory, Banff, Canada  
**2023** 5th Innate Immune Memory Conference, Naples, Italy

## G. Selected publications

1. Katzmarski N, Domínguez-Andrés J, Cirovic B, ... Schultze JL, Roger T, Giamarellos-Bourboulis EJ, Schlitzer A, **Netea MG**. Transmission of trained immunity and heterologous resistance to infections across generations. **Nat Immunol**. 2021 Nov;22(11):1382-1390
2. Giamarellos-Bourboulis EJ, Tsilika M, Moorlag S, Antonakos N, Kotsaki A, Domínguez-Andrés J, Kyriazopoulou E, Gkavogianni T, Adami ME, Damoraki G, Koufargyris P, Karageorgos A, Bolanou A, Koenen H, van Crevel R, Droggiti DI, Renieris G, Papadopoulos A, **Netea MG**. Activate: Randomized Clinical Trial of BCG Vaccination against Infection in the Elderly. **Cell**. 2020 Oct 15;183(2):315-323.e9
3. Bruno M, Kersten S, Bain JM, Jaeger M, ... , Gow NAR, Brown AJP, Meis JF, Williams DL, **Netea MG**. Transcriptional and functional insights into the host immune response against the emerging fungal pathogen *Candida auris*. **Nat Microbiol**. 2020 Dec;5(12):1516-1531
4. Temba GS, Kullaya V, Pecht T, Mmbaga BT, Aschenbrenner AC, Ulas T, Kibiki G, Lyamuya F, Boahen CK, Kumar V, Joosten LAB, Schultze JL, van der Ven AJ, **Netea MG**, de Mast Q. Urban living in healthy Tanzanians is associated with an inflammatory status driven by dietary and metabolic changes. **Nat Immunol**. 2021 Mar;22(3):287-300

5. de Bree LCJ, Mourits VP, Koeken VA, Moorlag SJ, Janssen R, Folkman L, Barreca D, Krausgruber T, Fife-Gernedl V, Novakovic B, Arts RJ, Dijkstra H, Lemmers H, Bock C, Joosten LA, van Crevel R, Benn CS, **Netea MG**. Circadian rhythm influences induction of trained immunity by BCG vaccination. **J Clin Invest**. 2020 Oct 1;130(10):5603-5617
6. Bekkering S, Arts RJW, ... , Stunnenberg H, Riksen NP, **Netea MG**. Metabolic Induction of Trained Immunity through the Mevalonate Pathway. **Cell**. 2018; 172:135-146
7. 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
8. 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
9. 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
10. 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
11. **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
12. Cheng SC, Quintin J, Cramer RA, ... , Stunnenberg HG, Xavier RJ, **Netea MG**. mTOR/HIF1 $\alpha$ -mediated aerobic glycolysis as metabolic basis for trained immunity. **Science**, 2014, 345: 1250684
13. 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
14. van de Veerdonk FL, Plantinga TS, ... , 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
15. **Netea MG**, Quintin J, van der Meer JW. Trained immunity: a memory for innate host defense. **Cell Host Microbe**. 19;9:355-61.

#### **H. Invited presentations at international conferences in the last 5 years**

- 2019 Gordon Research Conference on Fungal Immunology, Galveston, USA
- 2019 Aegean Conference on Innate Immunity, Rhodos, Greece
- 2019 Nature Immunology Human Immunology Conference, Kos, Greece
- 2019 European Society of Clinical Investigation Conference, Coimbra, Portugal
- 2019 Keystone Conference on Macrophage Receptors, Taiwan
- 2019 IMS-JSI International Symposium, Tokyo, Japan
- 2020 Keystone Conference "Tuberculosis", Santa Fe, USA
- 2020 Keystone Conference "Tissue Immunity", Boulder, Colorado, USA
- 2020 Welcome Trust Conference on Heterologous Vaccine Effects, Cambridge, UK
- 2020 Shock Society Meeting, Toronto, Canada
- 2020 Keystone Meeting on Maternal Immunity, Keystone, USA
- 2020 Athero-immunometabolism Meeting, Bahamas
- 2022 The 2021-2022 RGE Murray Annual Lecture, Western University, Canada
- 2022 Keystone Meeting on Innate Immune Memory, Banff, Canada
- 2022 Aegean Conference on Innate Immunity, Ioannina, Greece
- 2023 European Congress of Internal Medicine, Athens, Greece
- 2023 Gordon Research Conference "Sex differences in immunity", Ventura, USA
- 2023 ESCMID European Congress Clinical Microbiology and Infectious Diseases, Copenhagen, Denmark
- 2023 Aegean Innate Immunity Conference, Chania, Greece
- 2023 Gordon Research Conference "Atherosclerosis", Castelldefels, Spain
- 2023 Keystone conference "Ageing and immunity", Whistler, Canada
- 2024 Keynote speaker ESCMID Global, Barcelona, Spain
- 2024 Aegean Innate Immune Conference, Corynthos, Greece
- 2024 Toll 2024 Conference, Rotterdam, Netherlands
- 2024 European Congress of Immunology, Dublin, Ireland
- 2024 Infectious Diseases Week Conference, Los Angeles, USA

Nijmegen, 03-May-2024  
Mihai G. Netea.