

Dr. Leonard Daniël Samson, MD

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SUMMARY OF QUALIFICATION

- Medical doctor with ~7 months patient care experience in geriatrics, neurology and general internal medicine.
- Experience as a statistical programmer gained during ~5 years of research in systems immunology and aging in a retrospective longitudinal cohort.
- Experience with setup and design of clinical studies and with implementing advanced biostatistics for longitudinal data analysis using SAS and R.
- Experience with multiple laboratory techniques including multiplex immunoassays and advanced flow cytometry (see skills section for more details).

WORK EXPERIENCE

- Feb. 2016 – Sept. 2021 **Doctoral Research Fellow**
RIVM National Institute for Public Health and the Environment, The Netherlands
Center for Nutrition, Prevention and Health Services, and Center for Immunology of Infectious Diseases and Vaccines
- Successfully established a collaboration between immunology and epidemiology departments within the RIVM
 - Set-up a study cohort within the ongoing Doetinchem cohort study, which included obtaining approval of the medical ethical committee, inviting participants, and collecting and processing blood samples
 - Implemented a robust statistical framework for longitudinal data analyses, including association studies, linear mixed modeling, survival analyses, machine learning algorithms (i.e., Random Forest, elastic net)
 - Successfully designed and implemented several laboratory assays (see skills & expertise section)
 - Developed a program in R to standardize and automatize complex calculations and multiple quality control steps of immunoassay analyses at the RIVM
- May 2015 – Jan. 2016 **Infectious Diseases control resident**
Municipal Medical Service (GGD) Rotterdam-Rijnmond, Rotterdam, The Netherlands
- Issued travel health advisory and vaccination for the Public Health Service of the Department of Infectious Diseases Control
- Mar. 2015 – April 2015 **Medical doctor**
Center for Rheumatism and Rehabilitation, Rotterdam, The Netherlands
- Responsible for the rehabilitation of elderly patients at the ward under supervision of a specialist
- June 2014 – Dec. 2014 **Medical doctor**
Neurology Department, Haaglanden Medical Center, Bronovo Hospital, The Hague, The Netherlands
Responsible for patients at the ward, such as the stroke unit, under supervision of a Neurologist.
- Job responsibilities included (neurological) health assessments, diagnostic tests, prescription of medication, and performing lumbar punctures

- Jan. 2014 – Mar. 2014 **Software and technical consultant**
Northumbria University, Newcastle upon Tyne, United Kingdom
- Related to the scientific research internship (see below). Tasks were to filter and analyze data, and to adjust and develop software (Java and Excel VBA) to automatize future analysis with the same research set-up
- Sept. 2013 – Mar. 2014 **Medical Intern**
Northumbria University, Newcastle upon Tyne, United Kingdom
- Medical scientific research, funded by the European Space Agency (ESA), about rehabilitation of people with low back pain using an exercise device with an unstable base of support and measuring muscle contractions by ultrasonography
- Apr. 2013 – Jul. 2013 **Medical residency: radiology and radiotherapy**
Leiden, Leids Universitair Medisch Centrum, The Netherlands
- Extra-curricular medical residencies. Tasks were to get an insight in the job of medical specialists in radiology and radiotherapy
- Nov. 2012 – Mar. 2013 **Medicine: Medical residency**
HAGA hospital, The Hague, The Netherlands
- Medical residency at the Internal Medicine department. Responsible for several patients at the ward under supervision of a specialist
- Sept. 2012 – Nov. 2012 **Medicine: Minor Medical technology**
Leiden University, Technical University Delft, Erasmus Medical Center Rotterdam
- Extra-curricular minor. Aim was to advance medical care with technology. Subjects included in-depth MRI/CT technology, circulation and fluid mechanics, mathematics, and biomechanics

EDUCATIONAL BACKGROUND

Feb. 2016 – Sept. 2021	PhD in Immunology and Epidemiology	University of Groningen, The Netherlands
Sept. 2006 – April 2014	Doctor of Medicine	Leiden University, The Netherlands

SKILLS AND EXPERTISE

- Analytical and programming skills: Proficient user of (bio)statistical software (i.e., SAS, R, Git, (R) Markdown) for statistical analyses, programming, and version control.
- Laboratory skills: Flow cytometry (i.e., multicolor panel design using surface- and intranuclear staining protocols, fluorescent cell barcoding and staining of intranuclear phosphorylated STATS); PBMC isolation; Bead-based multiplex immunoassays for the quantification of anti-viral antibodies (e.g., CMV, VZV, EBV, measles, mumps, rubella)
- Language skills: Dutch (native), English (proficient), German (Independent user)

WORKSHOPS AND TRAINING

01.2019	Course: using R to apply multiple machine learning techniques for statistical analysis
02.2019	Course: RNA sequencing: Experimental design, data analysis and interpretation
07.2018	Summer school: Molecular Epidemiology of Chronic Disease and the Exposome
05.2018	Course: Academic Writing in English
08.2017	Summer school: Infection meets Immunity
10.2017	Course: Advanced (non) linear regression techniques in R
03.2017	Course: using R for statistical analyses.

Peer-reviewed publications

1. **L.D. Samson**, A.M. Buisman, J.A. Ferreira, H.S.J. Picavet, W.M.M. Verschuren, A.M.H. Boots, P.M. Engelfriet. Inflammatory marker trajectories with frailty and aging in a 20-year longitudinal study, *Clinical & Translational Immunology*, 2022, <https://doi.org/10.1002/cti2.1374>
2. **L.D. Samson**, P.M. Engelfriet, W. M. Monique Verschuren, H.S.J. Picavet, J.A. Ferreira, M. de Zeeuw-Brouwer, A.M. Buisman, A.M.H. Boots, Impaired JAK-STAT pathway signaling in leukocytes of frail elderly, *Immun Ageing* 2022, <https://doi.org/10.1186/s12979-021-00261-w>
3. **L.D. Samson***, S.P.H. van den Berg*, P.M. Engelfriet, A.M.H. Boots, M. Hendriks, L.G.H. de Rond , M. de Zeeuw-Brouwer, W.M.M. Verschuren, J.A.M. Borghans, A.M. Buisman#, Debbie van Baarle#, Limited effect of duration of CMV infection on adaptive immunity and frailty: insights from a 27-year-long longitudinal study, *Clinical & Translational Immunology* 2020; <https://doi.org/10.1002/cti2.1193> (*: shared first authorship, #: shared last authorship)
4. C.M. Dieteren, **L.D. Samson**, M. Schipper, J. van Exel, W.B.F. Brouwer, W.M.M. Verschuren, H.S.J. Picavet. The healthy aging index analyzed over 15 years in the general population: the Doetinchem Cohort Study, *Preventive Medicine* 2020; <https://doi.org/10.1016/j.ypmed.2020.106193>
5. **L.D. Samson**, J.A. Ferreira, A.M.H. Boots, W.M.M. Verschuren, A.M. Buisman, P.M. Engelfriet. In-depth immune cellular profiling reveals sex-specific associations with frailty, *Immunity & Ageing*, 17(1), 20, 2020, <https://doi.org/10.1186/s12979-020-00191-z>.
6. **L.D. Samson**, A.M.H. Boots, W.M.M. Verschuren, H.S.J. Picavet, P.M. Engelfriet, A.M. Buisman, Frailty is associated with elevated CRP trajectories and higher numbers of neutrophils and monocytes, *Experimental Gerontology*, vol 125, 2019, 110674, DOI: <http://10.1016/j.exger.2019.110674>.
7. A. Winnard, D. Debusse, M. Wilkinson, **L.D. Samson**, T. Weber, N. Caplan, Movement amplitude on the Functional Re-adaptive Exercise Device: deep spinal muscle activity and movement control, *European journal of applied physiology*, vol 117-8, 2017, 1597-1606, DOI: <https://10.1007/s00421-017-3648-3>

Conference contributions

1. **L.D. Samson**, Cellular and molecular immune markers of aging and frailty, June 2021, University Medical Center Groningen, The Netherlands, *PhD seminar*
2. **L.D. Samson**, Cellular and molecular immune markers of aging and frailty, November 2020, RIVM, The Netherlands, *PhD seminar*
3. **L.D. Samson**, A.M.H. Boots, W.M.M. Verschuren, H.S.J. Picavet, P.M. Engelfriet, A.M. Buisman, Frailty is associated with elevated CRP trajectories and higher numbers of neutrophils and monocytes, Dutch Epidemiology Conference (WEON), 13-14 June 2019, Groningen, The Netherlands, *oral presentation*
4. **L.D. Samson**, P.M. Engelfriet, W.M.M. Verschuren, H.S.J. Picavet, A.M.H. Boots, A.M. Buisman, Development of frailty is associated with elevated CRP trajectories and increased numbers of innate immune cells, European Congress of Immunology, 25 September 2018, Amsterdam, The Netherlands, *poster presentation*
5. **L.D. Samson**, P.M. Engelfriet, W.M.M. Verschuren, A.M.H. Boots, A.M. Buisman, Immune phenotypes and long-term inflammation status according to age, sex, and frailty. Aging, Inflammation and Immunity keystone symposium, 25 February- 1 March 2018, Austin, United States, *oral presentation*