

# Stanford

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## Dunja Mrdjen

Postdoctoral Scholar, Pathology

### Bio

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#### BIO

Dr. Mrdjen received a B.Sc. in Molecular and Cell Biology and a B.Sc. (Hons) in Medical Biochemistry from the University of Cape Town (UCT), South Africa. During her M.Sc. research she investigated the imprinting of maternal immune experience onto offspring in mouse models at the Institute of Infectious Diseases and Molecular Medicine at UCT. Following her M.Sc. work, Dr. Mrdjen interned at the Singapore Immunology Network (SIgN) at Biopolis, Singapore, and then moved to Zurich, Switzerland where she completed her Ph.D. in Immunology at the University of Zurich under the supervision of Prof. Dr. Burkhard Becher. Dr. Mrdjen's Ph.D. work involved the use of single-cell technologies like CyTOF mass cytometry to investigate the immune compartments of the murine brain at steady state and during different kinds of brain diseases.

With funding from the Swiss National Science Foundation and Novartis, Dr. Mrdjen's post-doctoral research at Stanford University with Prof. Thomas Montine and Dr. Sean Bendall focuses on understanding the cellular networks and spatial interactions between cells, pathology and genetic risk products that drive Alzheimer's disease in the human brain, by leveraging multiplexed ion beam imaging (MIBI) and computational approaches to data analysis.

#### HONORS AND AWARDS

- Postdoctoral Fellowship, Novartis Foundation for bio-medical Research (2019-2020)
- SNF Early Postdoc Mobility Fellowship, Swiss National Science Foundation (2018-2019)
- UZH Candoc Forschungskredit, University of Zurich (2015 & 2016)
- Singapore Pre-graduate Award, Singapore Immunology Network, A\*STAR (2013)
- Research Fellowship, Harry Crossley Foundation (2012)
- South African Research Chairs Initiative Masters Scholarship, South African National Research Foundation (2011 & 2012)
- Baron Hartley Scholarship for International Travel, University of Cape Town (2011)
- Benfara Scholarship for Honors research, University of Cape Town (2010)
- Myer and Henry Bunrow Scholarship, University of Cape Town (2010)

#### PROFESSIONAL EDUCATION

- PhD, University of Zurich, Switzerland , Immunology (2018)
- MSc, University of Cape Town, South Africa , Clinical Science and Immunology (2013)
- BSc (Hons), University of Cape Town, South Africa , Medical Biochemistry (2010)
- BSc, University of Cape Town, South Africa , Molecular & Cell Biology (2009)

## Research & Scholarship

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### LAB AFFILIATIONS

- Sean Bendall (5/1/2018)
- Thomas Montine (5/1/2018)

### Publications

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#### PUBLICATIONS

- **MAUI (MBI Analysis User Interface)-An image processing pipeline for Multiplexed Mass Based Imaging.** *PLoS computational biology*  
Baranski, A., Milo, I., Greenbaum, S., Oliveria, J., Mrdjen, D., Angelo, M., Keren, L.  
2021; 17 (4): e1008887
- **Mass-tag barcoding for multiplexed analysis of human synaptosomes and other anuclear events.** *Cytometry. Part A : the journal of the International Society for Analytical Cytology*  
Gajera, C. R., Fernandez, R., Montine, K. S., Fox, E. J., Mrdjen, D., Postupna, N. O., Keene, C. D., Bendall, S. C., Montine, T. J.  
2021
- **Single-cell peripheral immunoprofiling of Alzheimer's and Parkinson's diseases.** *Science advances*  
Phongpreecha, T., Fernandez, R., Mrdjen, D., Culos, A., Gajera, C. R., Wawro, A. M., Stanley, N., Gaudilliere, B., Poston, K. L., Aghaeepour, N., Montine, T. J.  
2020; 6 (48)
- **Single-cell metabolic profiling of human cytotoxic T cells.** *Nature biotechnology*  
Hartmann, F. J., Mrdjen, D. n., McCaffrey, E. n., Glass, D. R., Greenwald, N. F., Bharadwaj, A. n., Khair, Z. n., Verberk, S. G., Baranski, A. n., Baskar, R. n., Graf, W. n., Van Valen, D. n., Van den Bossche, et al  
2020
- **GM-CSF and CXCR4 define a T helper cell signature in multiple sclerosis.** *Nature medicine*  
Galli, E., Hartmann, F. J., Schreiner, B., Ingelfinger, F., Arvaniti, E., Diebold, M., Mrdjen, D., van der Meer, F., Krieg, C., Nimer, F. A., Sanderson, N., Stadelmann, C., Khademi, et al  
2019
- **Pre-conception maternal helminth infection transfers via nursing long-lasting cellular immunity against helminths to offspring** *SCIENCE ADVANCES*  
Darby, M. G., Chetty, A., Mrdjen, D., Rolot, M., Smith, K., Mackowiak, C., Sedda, D., Nyangahu, D., Jaspán, H., Toellner, K., Waisman, A., Quesniaux, V., Ryffel, et al  
2019; 5 (5): eaav3058
- **Conventional DCs sample and present myelin antigens in the healthy CNS and allow parenchymal T cell entry to initiate neuroinflammation** *SCIENCE IMMUNOLOGY*  
Mundt, S., Mrdjen, D., Utz, S. G., Greter, M., Schreiner, B., Becher, B.  
2019; 4 (31)
- **The basis of cellular and regional vulnerability in Alzheimer's disease.** *Acta neuropathologica*  
Mrdjen, D. n., Fox, E. J., Bukhari, S. A., Montine, K. S., Bendall, S. C., Montine, T. J.  
2019
- **Elevated IgG Responses in Infants Are Associated With Reduced Prevalence of Mycobacterium tuberculosis Infection** *FRONTIERS IN IMMUNOLOGY*  
Logan, E., Luabeya, A., Mulenga, H., Mrdjen, D., Ontong, C., Cunningham, A. F., Tameris, M., McShane, H., Scriba, T. J., Horsnell, W. C., Hatherill, M.  
2018; 9: 1529
- **High-Dimensional Single-Cell Mapping of Central Nervous System Immune Cells Reveals Distinct Myeloid Subsets in Health, Aging, and Disease.** *Immunity*  
Mrdjen, D., Pavlovic, A., Hartmann, F. J., Schreiner, B., Utz, S. G., Leung, B. P., Lelios, I., Heppner, F. L., Kipnis, J., Merkler, D., Greter, M., Becher, B.  
2018; 48 (3): 599
- **High Dimensional Cytometry of Central Nervous System Leukocytes During Neuroinflammation.** *Methods in molecular biology (Clifton, N.J.)*  
Mrdjen, D., Hartmann, F. J., Becher, B.

2017; 1559: 321-332

- **High-dimensional single-cell analysis reveals the immune signature of narcolepsy.** *journal of experimental medicine*  
Hartmann, F. J., Bernard-Valnet, R., Quériault, C., Mrdjen, D., Weber, L. M., Galli, E., Krieg, C., Robinson, M. D., Nguyen, X., Dauvilliers, Y., Liblau, R. S., Becher, B.  
2016
- **The end of gating? An introduction to automated analysis of high dimensional cytometry data** *EUROPEAN JOURNAL OF IMMUNOLOGY*  
Mair, F., Hartmann, F. J., Mrdjen, D., Tosevski, V., Krieg, C., Becher, B.  
2016; 46 (1): 34-43
- **Natural and Vaccine-Mediated Immunity to Salmonella Typhimurium is Impaired by the Helminth Nippostrongylus brasiliensis** *PLOS NEGLECTED TROPICAL DISEASES*  
Bobat, S., Darby, M., Mrdjen, D., Cook, C., Logan, E., Auret, J., Jones, E., Schnoeller, C., Flores-Langarica, A., Ross, E. A., Vira, A., Lopez-Macias, C., Henderson, et al  
2014; 8 (12)