

Curriculum vitae

Personal information

Name: **Stephanie C. Ganal-Vonarburg** (maiden name: Ganal)
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Contact: Aebistrasse 20, CH-3012 Bern
stephanie.ganal@dbmr.unibe.ch, +41 78 645 2902
Date/Place of birth: 29.02.1984 in Offenburg, Germany
Nationality: German
Marital state: Married, 1 child (Pia, 09/2017)



Professional experience

01/2020 - present **Assistant Professor**
Peter Hans Hofschneider Professorship for Molecular Medicine
Department for BioMedical Research, Gastroenterology/Mucosal Immunology,
University of Bern (CH)

07/2016 – present **Scientific Manager**
CMF, University of Bern (CH)

09/2016 – 12/2019 **Senior scientist** (Oberassistentin)
Department for BioMedical Research, Gastroenterology/Mucosal Immunology,
Inselspital (University Hospital) Bern

09/2013 – 08/2016 **Postdoctoral fellow**
Department for BioMedical Research, Laboratory of Prof. Andrew Macpherson,
University of Bern (CH)

06/2009 – 08/2013 **Doctoral student**
Institute for Medical Microbiology and Hygiene, Albert-Ludwigs-University, Freiburg (D)

Education

05/2017 – 07/2019 **Certified Advanced Studies CAS Research Management**
University of Bern, Switzerland

06/2009 – 07/2013 **Ph.D. in Molecular Medicine/Immunology (“Summa cum laude”)**
Albert-Ludwigs-University, Freiburg (D)
Supervisor: Prof. Dr. med. Andreas Diefenbach

10/2003 – 04/2009 **Diploma (equivalent to M.Sc.) in Molecular Medicine**
Albert-Ludwigs-University, Freiburg (D)

09/2006 – 06/2007 Visiting student, Undergraduate program Microbiology and Immunology
University of British Columbia, Vancouver, Canada

Grants/Scholarships/Awards

09/2019 SNF Scientific Exchange Grant (18,900 CHF)

08/2019 EASI Genomics Grant (60,000 EUR)

11/2018 Johanna Dürmüller-Bol DBMR Research Prize (30,000 CHF)

06/2017 Bern Immunology Club Award for best paper of the year 2016

01/2017 Pfizer Research Prize in Immunology

09/2016 Gastroenterology Research Prize by the Swiss Society for Gastroenterology

03/2016 - 02/2017 EMBO Long-term fellowship

03/2014 - 02/2016 Marie Curie Intra-European Fellowship for postdoctoral researchers

10/2015 Cord-Michael Becker Prize for best Ph.D. thesis in Molecular Medicine

11/2009 - 05/2012 Boehringer Ingelheim Fonds (B.I.F.) Ph.D. scholarship

06/2009 - 07/2013 Member of the Spemann Graduate School for Biology and Medicine

09/2006 - 05/2007 DAAD (German Academic Exchange Service) scholarship for North America

06/2003 Aesculap Prize for extraordinary achievements in mathematics

Extracurricular courses

04/2017	EMBO Lab Management Course
09/2016	LTK2 (animal experimentation) course, Lausanne
04/2016	ChIP-Seq analysis course, SIB, EPFL, Lausanne
03/2016	Introduction course to “R” software,
09/2011	Attendance of 16 th FEBS International Summer School on Immunology, Hvar, Croatia
04/2011	Scientific Communication Training organized by Boehringer Ingelheim Fonds
10/2011	Advanced course in Biostatistics
02/2009	Animal handling course (FELASA B)

Skills

Technical:	In vivo mouse models, handling of axenic/gnotobiotic mice, isolation of lymphocytes from various organs, multi-color flow cytometry, ⁵¹ Cr release assay, ELISA, molecular biology techniques (DNA/RNA handling, quant. RT-PCR, RNA-Seq, Western blot), Chromatin-IP, ChIP-Seq, ATAC-Seq, immunohistochemistry, 16S microbiome analysis, Ig repertoire sequencing, single cell sequencing, embryo freezing and 2-cell stage embryo transfer, isotopic labeling of bacteria, metabolomics by mass spectrometry, aerobic/anaerobic microbial cultures
IT:	Mac and PC, Microsoft Office, FlowJo, GraphPadPrism, R
Languages:	German (mother tongue), English (fluent), French (very good), Italian (basics)

Oral presentations as invited speaker at scientific meetings

08/2019:	Invited speaker at the Leopoldina-Symposium Environmental Education of the Immune System in Health and Disease, Berlin (D)
06/2019:	Keynote speaker at ECMIS2019, Ghent (B)
05/2019:	Invited speaker at 3 rd PHENOMIN Summer school (F)
01/2019	Invited speaker at 2 nd Young Scientist Meeting, Bern (CH)
04/2018:	Invited speaker at Berta Ottenstein-Symposium, Freiburg (D)
06/2016:	Invited speaker at INFRAFRONTIER Industry and Innovation Workshop, Munich (D)
06/2016:	Invited speaker at R&D Forum, CSL Behring, Bern, CH

Teaching

- Organizer and Lecturer of the 1 week course “Gastrointestinal Tract” in the Master’s program Biomedical Sciences at the University of Bern (2014-present)
- Immunological Practicum for Bachelor students Biology at the University of Bern (2015-present)
- Lecturer in the Master Course in Molecular and Cellular Immunology (2016-present)
- Supervised 1 bachelor thesis (Anna Eremin, 2012), 3 master theses (Mirjam Zünd, 2015/2016; Sandro Christensen, 2017/2018; Nerea Fernandez, 2019/2020), 1 medical dissertation (Sandro Christensen 05/2019 – present), 3 PhD students (Catherine Mooser, 08/2016 – 08/2018; Cristina Kalbermatter 03/2017 – present; Zahra Sattarai, 11/2018 – present)

Other scientific milestones

- 20 Publications in peer-reviewed PubMed indexed journals (3 first-, 1 second- & 6 corresponding-authorships)
- *h*-index = 10 and 1041 citations (Scopus, 10.09.2019)
- Invited reviewer for: Immunology, Allergy, Mucosal Immunology, ERC, Belgian Research Fondation (FWO)
- Member of the Society for Mucosal Immunology
- Organizer of the 12th European Mucosal Immunology Group (EMIG) Meeting 2020 (www.emig2020.ch)

Original research articles:

H. Li, J. P. Limenitakis, B. Yilmaz, M. Zünd, K. D. McCoy, **S. C. Ganal-Vonarburg*** and A. J. Macpherson*. Distinct mucosal or systemic responses to non-pathogenic intestinal microbes build the baseline B cell repertoire and shape its functional responsiveness. *In revision*.

***Co-last and corresponding author**

C. Mooser, B. Yilmaz, I. Keller, T. Fuhrer, J. Zimmermann, M. Gomez de Agüero, H. Tschanz-Lischer, H. Li, J. P. Limenitakis, W.-D. Hardt, K. D. McCoy, B. Stecher, U. Sauer, **S. C. Ganal-Vonarburg**, A. J. Macpherson. Potential evolutionary stability in the mammalian gut revealed by a diverse gnotobiotic microbiota. *Submitted*.

J. Grootjans, N. Krupka, S. Hosomi, J.D. Matute, T. Hanley, S. Saveljeva, T. Gensollen, J. Heijmans, H. Li, J.P. Limenitakis, **S.C. Ganal-Vonarburg**, S. Suo S, A.M. Luoma, Y. Shimodaira, J. Duan, D.Q. Shih, M.E. Conner, J.N. Glickman, G.M. Fuhler, N.W. Palm, M.R. de Zoete, C.J. van der Woude, G.C. Yuan, K.W. Wucherpennig, S.R. Targan, P. Rosenstiel, R.A. Flavell, K.D. McCoy, A.J. Macpherson, A. Kaser, R.S. Blumberg. Epithelial endoplasmic reticulum stress orchestrates a protective IgA response. *Science*. 2019

Y. Uchimura, T. Fuhrer, L. Hai, M. Lawson, M. Zimmerman, M. Gomez de Agüero, B. Yilmaz, F. Ronchi, M. Sorribas, S. Hapfelmeier, **S. C. Ganal-Vonarburg**, K. D. McCoy, U. Sauer, A. J. Macpherson. Antibodies set boundaries limiting microbial metabolite penetration and the resultant mammalian host response. *Immunity* 2018

D. Bauché, B. Joyce-Shaikh, R. Jain, J. Grein, K. S. Ku, W. M. Blumenschein, **S. C. Ganal-Vonarburg**, D. C. Wilson, T. K. McClanahan, R. de Waal Malefyt, A. J. Macpherson, L. Annamalai, J. H. Yearley, and D. J. Cua. LAG3+ Regulatory T cells restrain Interleukin-23-producing CX3CR1+ gut resident macrophages during group 3 Innate lymphoid cells-driven colitis. *Immunity*. 2018

M. Gomez de Agüero*, **S. C. Ganal-Vonarburg***, T. Fuhrer, S. Rupp, Y. Uchimura, H. Li, A. Steinert, M. Heikenwalder, S. Hapfelmeier, U. Sauer, K. D. McCoy, A. J. Macpherson. The maternal microbiota drives early postnatal innate immune development. *Science* .2016.

***Co-first authors**

S. C. Ganal, S. L. Sanos, C. Kallfass, K. Oberle, C. Johner, C. Kirschning, S. Lienenklaus, S. Weiss, P. Staeheli, P. Aichele, A. Diefenbach. Priming of natural killer cells by nonmucosal mononuclear phagocytes requires instructive signals from commensal microbiota. *Immunity*. 2012

C. K. Ayata, **S. C. Ganal**, B. Hockenos, K. Willim, R. P. Vieira, M. Grimm, B. Robaye, J. M. Boeynaems, F. Di Virgilio, P. Pellegatti, A. Diefenbach, M. Idzko, P. Hasselblatt. Purinergic P2Y(2) receptors promote neutrophil infiltration and hepatocyte death in mice with acute liver injury. *Gastroenterology*. 2012

H. Raifer, A. J. Mahiny, N. Bollig, F. Petermann, A. Hellhund, K. Kellner, A. Guralnik, K. Reinhard, E. Bothur, M. Huber, S. Bauer, M. Lohning, E. A. Kiss, **S. C. Ganal**, A. Diefenbach, T. Korn, M. Lohoff. Unlike alpha beta T cells, gamma delta T cells, LTI cells and NKT cells do not require IRF4 for the production of IL-17A and IL-22. *Eur J Immunol*. 2012

I. Puga, M. Cols, C. M. Barra, B. He, L. Cassis, M. Gentile, L. Comerma, A. Chorny, M. Shan, W. Xu, G. Magri, D. M. Knowles, W. Tam, A. Chiu, J. B. Bussel, S. Serrano, J. A. Lorente, B. Bellosillo, J. Lloreta, N. Juanpere, F. Alameda, T. Baro, C. D. de Heredia, N. Toran, A. Catala, M. Torreadell, C. Fortuny, V. Cusi, C. Carreras, G. A. Diaz, J. M. Blander, C. M. Farber, G. Silvestri, C. Cunningham-Rundles, M. Calvillo, C. Dufour, L. D. Notarangelo, V. Lougaris, A. Plebani, J. L. Casanova, **S. C. Ganal**, A. Diefenbach, J. I. Arostegui, M. Juan, J. Yague, N. Mahlaoui, J. Donadieu, K. Chen, A. Cerutti. B cell-helper neutrophils stimulate the diversification and production of immunoglobulin in the marginal zone of the spleen. *Nat Immunol*. 2011

Review articles and others:

S. C. Ganal-Vonarburg* and C. U. Duerr*. The interaction of intestinal microbiota and innate lymphoid cells in health and disease throughout life. *Immunology*. 2020

***Equal contribution and corresponding author**

C. Mooser C and **S.C. Ganal-Vonarburg**. Microbiota as a cornerstone in the development of primary sclerosing cholangitis: paving the path for translational diagnostic and therapeutic approaches. *Gut*. 2019

C. Mooser, M. Gomez de Agüero, **S. C. Ganal-Vonarburg***. Standardization in host-microbiota interaction studies: challenges, gnotobiology as a tool, and perspective. *Curr Opin Microbiol*. 2018

***Corresponding author**

M. J. H. Girard-Madoux, M. Gomez de Agüero, **S. C. Ganal-Vonarburg**, C. Mooser, G. T. Belz, A. J. Macpherson, E. Vivier. The immunological functions of the Appendix: An example of redundancy? *Semin Immunol*. 2018

A. J. Macpherson, B. Yilmaz, J. P. Limenitakis and **S. C. Ganal-Vonarburg**. IgA Function in Relation to the Intestinal Microbiota. *Annu Rev Immunol* 2018

A. J. Macpherson, **S. C. Ganal-Vonarburg***. Checkpoints for gut microbes after birth. *Nature*. 2018

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A. J. Macpherson, **S. C. Ganal-Vonarburg***. IgA-about the unexpected. *J Exp Med*. 2018

***Corresponding author**

A. J. Macpherson, M. G. de Agüero, **S. C. Ganal-Vonarburg***. How nutrition and the maternal microbiota shape the neonatal immune system. *Nat Rev Immunol* 2017

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S. C. Ganal-Vonarburg*, T. Fuhrer, M. Gomez de Agüero. Maternal microbiota and antibodies as advocates of neonatal health. *Gut Microbes*. 2017

***Corresponding author**

A. J. Macpherson, M. Heikenwalder, **S. C. Ganal-Vonarburg***. The Liver at the Nexus of Host-Microbial Interactions. *Cell Host Microbe*. 2016

***Corresponding author**

S. C. Ganal-Vonarburg, A. J. Macpherson. Our Mothers' Antibodies as Guardians of our Commensals. *Trends Mol Med*. 2016

H. Li, J. P. Limenitakis, **S. C. Ganal**, A. J. Macpherson. Penetrability of the inner mucus layer: who is out there?. *EMBO Rep*. 2015

S. C. Ganal, A. J. Macpherson. *An ambulance for retinol*. *Elife* 2014