


1) General Information		
Name, first name	Burgstaller, Gerald	
Academic title	Dr. rer. nat.	
Date of birth	Nov 15, 1972	
Office address	Comprehensive Pneumology Center (CPC)/LHI Ludwig-Maximilians-Universität, Asklepios Fachkliniken München-Gauting und Helmholtz München, Max-Lebsche-Platz 31, D-81377 München	
Contact	+49 89 3187 4678; gerald.burgstaller@helmholtz-muenchen.de	
Current position	Principal Investigator , Institute of Lung Health and Immunity (LHI), CPC, Helmholtz München	

2) Academic education		
Molecular Cell Biology, 2005	University of Salzburg	Dr. rer. nat.
Cellular Biochemistry, 2002	University of Salzburg	Mag. rer. nat. (M.S.)

3) Professional career

2018-present Principal Investigator, Helmholtz München, CPC, Institute Lung Health and Immunity (LHI)

2014-2018 Staff Scientist & Head of Imaging Core Unit, Helmholtz München, CPC, Institute for Lung Biology and Disease (ILBD)

2010-2014 Senior Postdoctoral Fellow / Head of Imaging Core Unit, Helmholtz München, CPC, Institute for Lung Biology and Disease (ILBD), Eickelberg Lab

2009 - 2010 Senior Postdoctoral Fellow, HMGU, Institute of Clinical Molecular Biology and Tumor Genetics

2005-2009 Postdoctoral Fellow, University of Vienna, Max-Perutz Laboratories

2005 Postgraduate Fellow, University of Salzburg, Department of Cell Biology

2002 - 2005 Postgraduate Fellow, Austrian Academy of Sciences, Institute of Molecular Biotechnology

Current Position:

Research group leader “Immunotherapeutic Technologies” at LHI/CPC/Helmholtz Munich

Head of platform live cell imaging (LHI imaging core unit since 2010)

Head of platform precision cut lung slices (human and mouse since 2016)

DZL principal investigator (since 2017) in the disease areas DPLD, ROR and PLI for CPC-M

My lab “Immunotherapeutic Technologies” has a strong focus on advanced therapeutic technologies leading to the discovery and development of novel therapeutics efficiently tackling chronic lung diseases. For this we work highly multidisciplinary, as our applied technologies include phenotypic high-throughput drug-screening, artificial intelligence methods, imageomics, medicinal chemistry, advanced 4D imaging techniques, human ex-vivo disease models (PCLS), mouse disease models, bioengineering and system biology approaches.

Publications high-impact (IF > 10) within the last 6 years:

- Sieber-Schäfer F, Jiang M, Kromer A, Nguyen A, Molbay M, Pinto Carneiro S, Jürgens D, **Burgstaller G**, Popper B, Winkeljann B, Merkel OM. Machine Learning-Enabled Polymer Discovery for Enhanced Pulmonary siRNA Delivery. *Adv Funct Mater.* 2025;35(49):e02805. doi: 10.1002/adfm.202502805.
- Yang L, Liu Q, Kumar P, Sengupta A, Farnoud A, Shen R, Trofimova D, Ziegler S, Davoudi N, Kutschke D, Voss C, Doryab A, Feuchtinger A, Blutke A, Yildirim AO, Schiller H, Razansky D, Kreyling WG, Piraud M, Isensee F, **Burgstaller G**, Rehberg M, Stoeger T, Schmid O. Multimodal imaging and deep learning unveil pulmonary delivery profiles and acinar migration of tissue-resident macrophages in the lung. *Nature Communications.* 2025.
- Mayr CH, Sengupta A, Ansari M, Pestoni JC, Ogar P, Angelidis I, Liontos A, Rodriguez-Castillo A, Lang NJ, Strunz M, Asgharpour S, Porras-Gonzalez D, Gerckens M, Oehrle B, Viteri-Alvarez V, Fernandez IE, Tallquist M, Irmiler M, Beckers

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- J, Eickelberg O, Stoleriu GM, Behr J, Kneidinger N, Yildirim AO, Ahlbrecht K, Morty RE, Samakovlis C, Theis FJ, **Burgstaller G***, Schiller HB*. Autocrine Sfrp1 inhibits lung fibroblast invasion during transition to injury induced myofibroblasts. *ERJ*. 2024. *equally contributed and co-corresponding.
- Lang NJ, Gote-Schniering J, Porras-Gonzalez D, Yang L, De Sadeleer LJ, Jentzsch RC, Shitov VA, Zhou S, Ansari M, Agami A, Mayr CH, Kashani BH, Chen Y, Heumos L, Pestoni JC, Geeraerts E, Anquetil V, Saniere L, Wögrath M, Gerckens M, Hatz R, Kneidinger N, Behr J, Wuyts WA, Stoleriu MG, Luecken MD, Theis FJ, **Burgstaller G***, Schiller HB*. Ex vivo tissue perturbations coupled to single cell RNA-seq reveal multi-lineage cell circuit dynamics in human lung fibrogenesis. *Science Translational Medicine* (in press and published on 06.12.2023). * co-corresponding last author.
 - Baldassi D, Ambike S, Feuerherd M, Cheng CC, Peeler DJ, Feldmann DP, Porras-Gonzalez DL, Wei X, Keller LA, Kneidinger N, Stoleriu MG, Popp A, **Burgstaller G**, Pun SH, Michler T, Merkel OM. Inhibition of SARS-CoV-2 replication in the lung with siRNA/VIPER polyplexes. *J Control Release*. 2022.
 - Zimmermann CM, Baldassi D, Chan K, Adams NBP, Neumann A, Porras-Gonzalez DL, Wei X, Kneidinger N, Stoleriu MG, **Burgstaller G**, Witzigmann D, Luciani P, Merkel OM. Spray drying siRNA-lipid nanoparticles for dry powder pulmonary delivery. *J Control Release*. 2022.
 - Ambike S, ..., **Burgstaller G**, Pichlmair A, Merkel O. M., Ko, C., & Michler, T. Targeting genomic SARS-CoV-2 RNA with siRNAs allows efficient inhibition of viral replication and spread. *Nucleic acids research* (2022).
 - Gerckens, ..., **Burgstaller**. Phenotypic drug screening in a human fibrosis model identified a novel class of antifibrotic therapeutics. *Science Advances* (2021).
 - Conlon, ..., **Burgstaller**, ..., Yildirim. Arginine methyltransferase regulates monocyte extravasation and function. *Nature Communications*. 2021.
 - Conlon, ..., **Burgstaller**, ..., Yildirim. Inhibition of LT β R signalling activates WNT-induced regeneration in lung. *Nature* vol. 588,7836 (2020): 151-156. doi:10.1038/s41586-020-2882-8.
 - Strunz, ..., **Burgstaller**, ..., Schiller. Alveolar regeneration through a Krt8+ transitional stem cell state that persists in human lung fibrosis. *Nature communications* vol. 11,1 3559. 16 Jul. 2020, doi:10.1038/s41467-020-17358-3.
 - Erben, A., Hörning, M., Hartmann, B., Becke, T., Eisler, S. A., Southan, A., Cranz, S., Hayden, O., Kneidinger, N., Königshoff, M., Lindner, M., Tovar, G., **Burgstaller G**, Clausen-Schaumann, H., Sudhop, S., & Heymann, M.. Precision 3D-Printed Cell Scaffolds Mimicking Native Tissue Composition and Mechanics. *Advanced healthcare materials* (2020).
 - Yang, ..., **Burgstaller**, ..., Schmid. Three-Dimensional Quantitative Co-Mapping of Pulmonary Morphology and Nanoparticle Distribution with Cellular Resolution in Nondissected Murine Lungs. *ACS nano* vol. 13,2 (2019): 1029-1041. doi:10.1021/acsnano.8b07524
 - Sun, ..., **Burgstaller**, ..., Walch. Pharmacometabolic response to pirfenidone in pulmonary fibrosis detected by MALDI-FTICR-MSI. *ERJ*. 52,3 1702314. 15 Sep. 2018, doi:10.1183/13993003.02314-2017.
 - Burgstaller**, et al. The instructive extracellular matrix of the lung: basic composition and alterations in chronic lung disease. *ERJ*. 50,1 1601805. 5 Jul. 2017, doi:10.1183/13993003.01805-2016.

Manuscripts currently in revision/review:

- Mattner LF, Zeng Z, Mayr CH, Ansari M, Wei X, Asgharpour S, Wasik AA, Kneidinger N, Stoleriu MG, Behr J, Polleux J, Yildirim AO, **Burgstaller G**, Mann M, Schiller HB. Phosphoproteomics of cellular mechanosensing reveals NFATC4 as a regulator of myofibroblast activity. *Molecular Systems Biology*. <https://www.biorxiv.org/content/10.1101/2023.02.13.528335v1> (Status: in revision)

Publications (IF < 10) since 2023:

- Müller JT, Kromer APE, Ezaddoustdar A, Alexopoulos I, Steinegger KM, Porras-Gonzalez DL, Berninghausen O, Beckmann R, Braubach P, **Burgstaller G**, Wygrecka M, Merkel OM. Nebulization of RNA-Loaded Micelle-Embedded Polyplexes as a Potential Treatment of Idiopathic Pulmonary Fibrosis. *ACS Appl Mater Interfaces*. 2025 Feb 26;17(8):11861-11872. doi: 10.1021/acsnano.4c21657. Epub 2025 Feb 12. PMID: 39938880; PMCID: PMC11874001.
- Kastlmeier MT, Gonzalez-Rodriguez E, Cabanis P, Guenther EM, König AC, Han L, Hauck SM, See F, Asgharpour S, Bukas C, **Burgstaller G**, Piraud M, Lehmann M, Hatz RA, Behr J, Stoeger T, Hilgendorff A, Voss C. Cytokine signaling converging on *IL11* in ILD fibroblasts provokes aberrant epithelial differentiation signatures. *Front Immunol*. 2023.
- Burgy O, Mayr CH, Llobell BB, Sengupta A, Schenese D, Coughlan C, Parimon T, Chen P, Lindner M, Hilgendorff A, Mann M, Yildirim AO, Eickelberg O, Schiller HB, Lehmann M, **Burgstaller G***, Königshoff M*. Fibroblasts-derived extracellular vesicles contain SFRP1 and mediate pulmonary fibrosis. *JCI insights*. 2024. *equally contributed.
- Stoleriu MG, Ansari M, Strunz M, Schamberger A, Heydarian M, Ding Y, Voss C, Schneider JJ, Gerckens M, **Burgstaller G**, Castelblanco A, Kauke T, Fertmann J, Schneider C, Behr J, Lindner M, Stacher-Priehse E, Irmeler M, Beckers J, Eickelberg O, Schubert B, Hauck SM, Schmid O, Hatz RA, Stoeger T, Schiller HB, Hilgendorff A. COPD basal cells are primed towards

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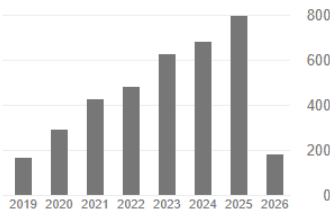
secretory to multiciliated cell imbalance driving increased resilience to environmental stressors. Thorax. 2024 May 20;79(6):524-537. doi: 10.1136/thorax-2022-219958. PMID: 38286613; PMCID: PMC11137452.

Reviewing activities for:

- Nature Communications
- ERJ
- American Journal of Respiratory and Critical Care Medicine (ATS)
- AJP lung
- ACS Pharmacology & Translational Science
- Biomaterials Advances
- Acta Biomaterialia
- JOVE
- Biological Engineering
- Frontiers in Cell and Developmental Biology
- PLOS One
- Cells

Citations and Hirsch-Faktor:

Cited by	VIEW ALL	
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Citations	4713	3197
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Patents: “Novel anti-fibrotic drugs” (EP 21178481.4); priority date: 09.06.2021. Internationalization in 2023.

Third-party funding (app. 2.2 Mio. Euro) within the last 9 years:

PI	2026 Daiichi Sankoy – with Michael Gerckens and Malte Lücken	750.000 Euro
Co-PI	2026 VW-Stiftung with Olivia Merkel	10.000 Euro
PI	2025 CHC Data Generation Projects 2025 – with Ewa Szcureck	150.000 Euro
PI	2025 Helmholtz Validationfonds für Projekt “Solution” - Extension	250.000 Euro
PI	2025 Helmholtz Munich – Innovation and Development	95.000 Euro
PI	2025 BMBF, DZL Consortium – PRECIOUS („human PCLS trial”); 1M in total	200.000 Euro
PI	2025 OpenMe Boehringer Ingelheim – SFRP2 in lung fibrosis	250.000 Euro
PI	2023 Helmholtz Validationfonds für Projekt “Solution”	1.000.000 Euro
PI	2023 HMGU innovation and development (extension)	96.000 Euro
PI	2022 HMGU innovation and development	100.000 Euro
PI	2021 HAICU, together with Dr. Kyle Harrington (MDC Berlin)	200.000 Euro
Co-PI	2021 VW-Stiftung	75.000 Euro
Co-PI	2020/2021 DZL flexible funds	15.000 Euro
PI	2020 BMBF/DZL Covid-19	26.000 Euro
PI	2018 HMGU innovation and development	100.000 Euro
PI	2018 ERS short term fellowship	9.600 Euro
PI	HMGU 2017, competitive funds for large investments (lightsheet microscope)	520.000 Euro

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Research funds since 2017: 3.9 million Euros in research funding from BMBF, DZL, Boehringer Ingelheim, Daiichi Sankoy, VW-Stiftung, Helmholtz Initiative and Networking Fund, Helmholtz Innovation Fund, and the European Respiratory Society, supporting projects in therapeutic innovation and development, and fibrosis research.

Supervision/Mentoring:

- 2 PhD students (finished and ongoing)
- 4 PostDocs (ongoing)
- 5 MD students (finished and ongoing)
- 4 Master students (finished)
- 2 Bachelor students (finished)
- 3 Internships (finished)

Industry collaborations:

- Astra Zeneca (compound screening in human fibrosis models) (2019)
- BenePharma (compound screening in human fibrosis models) (2023)
- Boehringer Ingelheim (2025-2027)
- Daiichi Sankoy (2026-2028)
- iOMX (2025-2026)