



Professional experience

January 2022 – present	Human Frontier Science Program postdoctoral fellow in the Amieva Lab, Department of Pediatrics and Infectious Diseases, Stanford School of Medicine, USA
May 2020 – December 2021	Postdoctoral researcher in the group of Metabolic Interactions, Max Planck Institute for Marine Microbiology (MPIMM), Bremen, Germany
October 2015 – April 2020	Doctoral student (Dr. rer. nat.) in the Department of Symbiosis, MPIMM, Bremen, Germany, <i>summa cum laude</i> (1.0) Topic: “Correlative mass spectrometry imaging of animal-microbe symbiosis”
June 2014 – August 2014	Research assistant for setting up a 3D imaging lab in the ultrastructure laboratory of Prof. Gerhard Wanner, Ludwig Maximilian University of Munich, Germany
August 2012 – September 2012	Intern for cultivation and metabolomics of microbial cultures in the laboratory of Dr. Huw Williams, Natural Sciences, Division of Cell & Molecular Biology, Imperial College, London, UK

Education

October 2013 – September 2015	Master of Science in biology, focusing on bio-imaging techniques at Ludwig Maximilian University of Munich, Germany, Final grade: 1.07 Thesis topic: “A correlative approach for combining multimodal imaging techniques in a 3D scenario”, Grade 1.0
October 2010 – September 2013	Bachelor of Science in biology at Ludwig Maximilian University of Munich, Germany, Final grade: 2.52 Thesis topic: “Elastic alignment of paraffin section series displayed in 3D”, Grade 1.0

Science communication and public outreach

2020 – Blog posts on correlative mass spectrometry imaging (<https://tinyurl.com/qov4ap6>)
2020 – Google Arts and Culture article of Antarctica research cruise (<https://tinyurl.com/yy6739rr>)
2018 – Animations for a themed concert "Music & Science" by Prof. Nicole Dubilier in the Elbphilharmonie
2017 – Portrait during South Pacific research cruise (<http://geschichten.ptj.de/so253#78596>)
2016 – Scientific contribution to a virtual poster and 3D prints in the foyer of the MPIMM in Bremen

Teaching (Bachelor- and Master students)

2016 and 2017	Supervision of two master students during lab practical
2015 and 2016	Tutor for microbial symbiosis (MarMic, MPIMM Bremen)
April 2012–August 2014	Tutor for zoology and botany diversity courses (LMU Munich)

Voluntary work

2017–2018	PhD representative of MPIMM, Bremen
2007–2014	Trainer and homework tutor for children from socially challenged families and refugees in the youth center “Clean Project Neuhausen“ in Munich, Germany
September 2009–September 2010	Social service, focusing on sports with teenagers from difficult social backgrounds run by the Bavarian Sports Confederation

Awards

2022	Human Frontier in Science Program long-term fellowship
2022	Newcomb Cleveland Prize of the American Association for the Advancement of Science, awarded as most outstanding scientific paper of 2022, coauthoring Breinlinger <i>et al.</i> ,
2021	Otto Hahn Medal of the Max Planck Society for outstanding scientific achievements during doctorate studies
2021	Best talk during “IT MA(t)TERs Conference” of the Max Planck Institutes for Terrestrial and Marine Microbiology
2019	Best students’ poster at the retreat of the International Max Planck Research Schools program Marmic
2019	Best students’ talk at the annual conference of the International Society of Chemical Ecology (ISCE)
2018	Mass Spectrometry Imaging Award in honor of "brilliant ideas or works achieved using mass spectrometry imaging techniques" by ImaBiotech
2018	Metabolites MDPI 2018 travel award

Selected Publications (* indicates corresponding authorships)

Geier B*, Sogin E, Michellod D, Janda M, Kompauer M, Spengler B, Dubilier N, Liebeke M*. 2020. *Spatial metabolomics of in situ, host-microbe interactions at the micrometer scale*. Nature Microbiology. **5**, 498–510. doi:10.1038/s41564-019-0664-6

Geier B*, Oetjen J, Ruthensteiner B, Polikarpov M, Gruber-Vodicka H., Liebeke M*. 2021. *Connecting structure and function from organisms to molecules in small-animal symbioses through chemo-histotomography*. PNAS. **27**:e2023773118. doi:10.1073/pnas.2023773118 (commentary “Taking a microscale look at symbiotic interactions – and why it matters” by Thomas C.G. Bosch, in press.)

Geier B* and Liebeke M*. 2020. *Metaboliten-FISHing – Die chemische Sprache von Symbiosen sichtbar machen*. BIOspektrum. doi: 10.1007/s12268-020-1435-x, (cover image of the Issue by Geier B.)

Schucht PJ, Rühr PT, **Geier B**, Glaw F, Lambert M. 2020. *Armored with skin and bone: A combined histological and μ CT -study of the exceptional integument of the Antsingy leaf chameleon *Brookesia perarmata* (Angel, 1933)*. Journal of Morphology. **281**, 754– 764. doi:10.1002/jmor.21135, (μ CT dataset by Geier B as cover image of the Issue).

Geier B*, Franke M, Ruthensteiner B, González Porras, MA, Gruhl, A, Wörmer, L, Moosmann, J, Hammel, JU, Dubilier, N, Leisch, N, Liebeke, M. 2019. *Correlative 3D anatomy and spatial chemistry in animal-microbe symbioses – Developing sample preparation for phase-contrast synchrotron radiation based micro-computed tomography and mass spectrometry imaging*. Proceedings of the International

Society for Optics and Photonics, Developments in X-Ray Tomography XII (invited paper) 1111306.
doi:10.1117/12.2530652

Breinlinger S, Phillips TJ, Haram BM, Mareš J, Martínez Yerena JA, Hrouzek P, Sobotka R, Henderson WM, Schmieder P, Williams SM, Lauderdale JD, Wilde HD, Gerrin W, Kust A, Washington JW, Wagner C, **Geier B**, Liebeke M, Enke H, Niedermeyer THJ, Wilde SB. 2021. *Hunting the eagle killer: A cyanobacterial neurotoxin causes vacuolar myelinopathy*. *Science*. **371**: 6536, 10.1126/science.aax9050

Leisch N, Pende N, Weber PM, Gruber-Vodicka HR, Verheul J, Vischer NOE, Abby SS, **Geier B**, Blaauwen T den, Bulgheresi S. 2017. *Asynchronous division by non-ring FtsZ in the gammaproteobacterial symbiont of Robbea hypermnestra*. *Nature Microbiology* **2**:16182.
doi:10.1038/nmicrobiol.2016.182

Presentations as invited speaker

2022 – Online talk at Montana State University, Bozeman, USA

Spatial metabolomics of in situ, host-microbe interactions at the micrometer scale

2021 – Online talk for CMMR seminar series & biology of the interplay of host and microbiome early career (BIOHME) at Baylor College of Medicine, Houston, USA

Correlative mass spectrometry imaging in animal-microbe symbioses

2021 – Online talk at Vanderbilt University Medical Center Institute for Infection, Immunology & Inflammation (VI4) seminar, Nashville, USA

Correlative mass spectrometry imaging in animal-microbe symbioses

2019 – In person talk at the Scripps Center for Mass Spectrometry, San Diego, USA

Spatial metabolomics of in situ, host-microbe interactions – combining untargeted metabolite imaging and fluorescence labeling

2019 – In person talk at the annual conference of the International Society for Optics and Photonics (SPIE), San Diego, USA

Correlative 3D anatomy and spatial chemistry in animal-microbe symbioses – Sample preparation for phase-contrast synchrotron radiation based micro-computed tomography and mass spectrometry imaging

2019 – In person talk at the annual conference of the International Society of Chemical Ecology (ISCE), Atlanta, USA (*award for best student's talk*)

Spatial metabolomics of in situ, host-microbe interactions – combining untargeted metabolite imaging and fluorescence labeling

Posters at conferences

2019 – Geier B, Emilia Sogin, Dolma Michellod, *et al.* *Spatial metabolomics of in situ, host-microbe interactions at the micrometer scale*. Marmic Retreat of the International Max Planck Research Schools, Germany (*first prize for best poster*)

2018 – Geier B, Emilia Sogin, Dolma Michellod, *et al.* *Teasing apart the metabolic interplay of a host-microbe symbiosis in situ with high-resolution mass spectrometry imaging and FISH*. ISME conference, Leipzig

Additional poster pitch in the session Visualization of microorganisms and their activity



Stanford, March 23