

André F. Rendeiro

Principal Investigator,
Computational Biologist

✉ arendeiro@cemm.at

🌐 andre-rendeiro.com

ORCID: 0000-0001-9362-5373

🐼 afrendeiro

🐦 afrendeiro

Current positions

- 2022/06 - **Principal Investigator**,
CeMM Research Center for Molecular Medicine of the Austrian Academy of Sciences, Austria
- 2024/03 - **Research Group Leader**,
Ludwig Boltzmann Institute for Network Medicine at the University of Vienna, Austria

Past positions and education

- 2020/03 - 2022/04 **Postdoctoral Associate in Computational Biomedicine**, *Institute of Computational Biomedicine, Engländer Institute for Precision Medicine, Weill Cornell Medicine, USA*
Supervisor: Olivier Elemento
- 2014/09 - 2020/01 **PhD**, *Medical University of Vienna, Austria*
Supervisor: Christoph Bock, CeMM Research Centre for Molecular Medicine
- 2012/09 - 2014/06 **MSc in Molecular and Cell Biology**, *University of Aveiro, Portugal*
- 2008/09 - 2012/07 **BSc in Biology**, *University of Aveiro, Portugal*

Key research

1. Abila, Buljan, Zheng *et al.*, ^Ω **Tissue clocks derived from histological signatures of biological aging enable tissue-specific aging predictions from blood.** *BioRxiv* (2024). doi:10.1101/2024.11.14.618081
 2. Kim *et al.*, ^Ω **Unsupervised discovery of tissue architecture in multiplexed imaging.** *Nature Methods* (2022). doi:10.1038/s41592-022-01657-2
 3. Rendeiro*, Ravichandran* *et al.*, **The spatial landscape of lung pathology during COVID-19 progression.** *Nature* (2021). doi:10.1038/s41586-021-03475-6
 4. Melms*, [..], Rendeiro*, *et al.*, **A molecular single-cell lung atlas of lethal COVID-19.** *Nature* (2021). doi:10.1038/s41586-021-03569-1
 5. Datlinger*, Rendeiro*, *et al.* **Ultra-high throughput single-cell RNA sequencing by combinatorial fluidic indexing.** *Nature Methods* (2021). doi:10.1038/s41592-021-01153-z
- ^Ω corresponding author; * first-author

Grants, fellowships and awards

- 2024 - 2028 **Understanding Biology with AI/ML 2023 Life Sciences call**, *Vienna Science and Technology Fund (WWTF)*, co-PI
- 2024 - 2031 **Ludwig Boltzmann Institute for Network Medicine**, *Ludwig Boltzmann Association (LBG)*, co-PI
- 2022 - 2027 **Aging and Longevity research grant**, *Angelini Ventures S.p.A. Rome, Italy*, co-PI
- 2020 - 2022 **Molecular and Translational Oncology Research (MTOR) training program**, *National Cancer Institute, USA*, Postdoc
- 2013 - 2014 **Erasmus studies mobility program scholarship**, *European Commission*, Master studies
- 2011 - 2012 **Erasmus studies mobility program scholarship**, *European Commission*, Undergrad studies

Publications

Publications: 48 (41 peer reviewed, 5 preprints, 12 first-author, 3 last-author)

Citations: 7260 (last 5 years: 6466)

h-index: 31 (last 5 years: 31)

Google Scholar Profile: <https://scholar.google.com/citations?user=lj17pqEAAAAAJ>

* *equal first-author contributions* ^Ω *joint corresponding authors*

Preprints (does not include preprints later published in peer-reviewed journals)

5. Yimin Zheng, Ernesto Abila, Eva Chrenková, Juliane Winkler, André F. Rendeiro. **LazySlide: accessible and interoperable whole slide image analysis**. BioRxiv (2025). doi:10.1101/2025.05.28.656548
4. Salvo Danilo Lombardo, André F. Rendeiro, Jörg Menche. **A multilayer network approach elucidates time- and tissue-specific developmental and aging processes**. BioRxiv (2025). doi:10.1101/2025.05.02.651926
3. Ernesto Abila, Iva Buljan, Yimin Zheng, Tamas Veres, Zhilong Weng, Maja C Nackenhorst, Wolfgang Hulla, Yuri Tolkach, Adelheid Woehrer, André F. Rendeiro^Ω. **Tissue clocks derived from histological signatures of biological aging enable tissue-specific aging predictions from blood**. BioRxiv (2024). doi:10.1101/2024.11.14.618081
2. Everardo Hegewisch-Sollosa, Janine E Melsen, Hiranmayi Ravichandran, André F. Rendeiro, Aharon G Freud, Bethany Mundy-Bosse, Johannes C Melms, Shira E Eisman, Benjamin Izar, Eli Grunstein, Thomas J Connors, Olivier Elemento, Amir Horowitz, Emily Mace. **Mapping human natural killer cell development in tonsil**. BioRxiv (2023). doi:10.1101/2023.09.05.556371
1. André F. Rendeiro*, Hiranmayi Ravichandran*, Junbum Kim, Alain C. Borczuk, Olivier Elemento, Robert E. Schwartz. **Persistent alveolar type 2 dysfunction and lung structural derangement in post-acute COVID-19**. medRxiv (2022). doi:10.1101/2022.11.28.22282811

Peer reviewed publications

41. Yimin Zheng, Zhihang Zheng, André F. Rendeiro^Ω, Edwin Cheung^Ω. **Marsilea: An intuitive generalized visualization paradigm for complex datasets**. Genome Biology (2025). doi:10.1186/s13059-024-03469-3
40. Andreas Reicher, Jíí Reini, Maria Ciobanu, Pavel Rika, Monika Malik, Marton Siklos, Viktoriia Kartysh, Tatjana Tomek, Anna Koren, André F. Rendeiro, Stefan Kubicek. **Pooled multicolor tagging for visualizing subcellular protein dynamics**. Nature Cell Biology (2024). doi:10.1038/s41556-024-01407-w
39. Kentaro Ohara, André F. Rendeiro, Bhavneet Bhinder, Kenneth Wha Eng, Hiranmayi Ravichandran, David Pisapia, Aram Vosoughi, Evan Fernandez, Kyrillus Shohdy, Jyothi Manohar, Shaham Beg, David Wilkes, Brian Robinson, Francesca Khani, Rohan Bareja, Scott Tagawa, Andrea Sboner, Olivier Elemento, Bishoy Morris Faltas, Juan Miguel Mosquera. **The evolution of genomic, transcriptomic, and single-cell protein markers of metastatic upper tract urothelial carcinoma**. Nature Communications (2024). doi:10.1038/s41467-024-46320-w
38. Oleksandr Petrenko, Philipp Königshofer, Ksenia Brusilovskaya, Benedikt S. Hofer, Katharina Bareiner, Benedikt Simbrunner, Frank Jühling, Thomas F. Baumert, Joachim Lupberger, Michael Trauner, Stefan G. Kauschke, Larissa Pfisterer, Eric Simon, André F. Rendeiro, Laura P.M. H. de Rooij, Philipp Schwabl, Thomas Reiberger. **Transcriptomic signatures of progressive and regressive liver fibrosis and portal hypertension**. iScience (2024). doi:10.1016/j.isci.2024.109301
37. David J. Falvo, Adrien Grimont, Paul Zumbo, William B. Fall, Julie L. Yang, Alexa Osterhoudt, Grace Pan, André F. Rendeiro, Yinuo Meng, John E. Wilkinson, Friederike Dünder, Olivier Elemento, Rhonda K. Yantiss, Erika Hissong, Richard Koche, Doron Betel, Rohit Chandwani. **A reversible epigenetic memory of inflammatory injury controls lineage plasticity and tumor initiation in the mouse pancreas**. Developmental Cell (2023). doi:10.1016/j.devcel.2023.11.008
36. Jin-Gyu Cheong, Arjun Ravishankar, Siddhartha Sharma, Christopher N Parkhurst, Simon Grassmann, Claire K Wingert, Paoline Laurent, Sai Ma, Lucinda Paddock, Isabella Miranda, Onur Karakaslar, Djamel Nehar-Belaid, Asa Thibodeau, Michael J Bale, Vinay K Kartha, Jim K Yee, Minh Y Mays, Chenyang

- Jiang, Andrew W Daman, Alexia Martinez de Paz, Dughan Ahimovic, Victor Ramos, Alexander Lercher, Erik Nielsen, Sergio Alvarez-Mullett, Ling Zheng, Andrew Earl, Alisha Yallowitz, Lexi Robbins, Elyse LaFond, Karissa Weidman, Sabrina Racine-Brzostek, He S Yang, David Price, André F. Rendeiro, Hiranmayi Ravichandran, Junbum Kim, Alain C Borczuk, Charles M Rice, R. Brad Jones, Edward J Schenck, Robert J Kaner, Amy Chadburn, Zhen Zhao, Virginia Pascual, Olivier Elemento, Robert E Schwartz, Jason Buenrostro, Rachel E Niec, Franck J Barrat, Lindsay Lief, Joe Sun, Duygu Ucar, Steven Z Josefowicz. **Epigenetic memory of coronavirus infection in innate immune cells and their progenitors**. *Cell* (2023). doi:10.1016/j.cell.2023.07.019
35. Evan K Noch, Laura N Palma, Isaiah Yim, Nayah Bullen, Yuqing Qiu, Hiranmayi Ravichandran, Junbum Kim, André F. Rendeiro, Melissa B Davis, Olivier Elemento, David J Pisapia, Kevin Zhai, H Carl LeKaye, Jason A Koutcher, Patrick Y Wen, Keith L Ligon, Lewis C Cantley. **Insulin feedback is a targetable resistance mechanism of PI3K inhibition in glioblastoma**. *Neuro-Oncology* (2023). doi:10.1093/neuonc/noad117
 34. Samir Rustam, Yang Hu, Seyed Babak Mahjour, André F. Rendeiro, Hiranmayi Ravichandran, Andreacarola Urso, Frank DOvidio, Fernando J. Martinez, Nasser K. Altorki, Bradley Richmond, Vasiliy Polosukhin, Jonathan A. Kropski, Timothy S. Blackwell, Scott H. Randell, Olivier Elemento, Renat Shaykhiev. **A Unique Cellular Organization of Human Distal Airways and Its Disarray in Chronic Obstructive Pulmonary Disease**. *American Journal of Respiratory and Critical Care Medicine* (2023). doi:10.1164/rccm.202207-1384OC
 33. Jiwoon Park, Junbum Kim, Tyler Lewy, Charles M. Rice, Olivier Elemento, André F. Rendeiro, Christopher E. Mason. **Spatial omics technologies at multimodal and single cell/subcellular level**. *Genome Biology* (2022). doi:10.1186/s13059-022-02824-6
 32. Junbum Kim, Samir Rustam, Juan Miguel Mosquera, Scott H. Randell, Renat Shaykhiev, André F. Rendeiro^Ω, Olivier Elemento^Ω. **Unsupervised discovery of tissue architecture in multiplexed imaging**. *Nature Methods* (2022). doi:10.1038/s41592-022-01657-2
 31. Paoline Laurent*, Chao Yang*, André F. Rendeiro*, Benjamin E. Nilsson-payant, Lucia Carrau, Vasuretha Chandar, Yaron Bram, Benjamin R. Tenoever, Olivier Elemento, Lionel B. Ivashkiv, Robert E. Schwartz, Franck J. Barrat. **Sensing of SARS-CoV-2 by pDCs and their subsequent production of IFN-I contribute to macrophage-induced cytokine storm during COVID-19**. *Science Immunology* (2022). doi:10.1126/sciimmunol.add4906
 30. Lissenya B Argueta, Lauretta A Lacko, Yaron Bram, Takuya Tada, Lucia Carrau, André F. Rendeiro, Tuo Zhang, Skyler Uhl, Brienne C Lubor, Vasuretha Chandar, Cristianel Gil, Wei Zhang, Brittany J Dodson, Jeroen Bastiaans, Malavika Prabhu, Sean Houghton, David Redmond, Christine M Salvatore, Yawei J Yang, Olivier Elemento, Rebecca N Baergen, Benjamin R tenOever, Nathaniel R Landau, Shuibing Chen, Robert E Schwartz, Heidi Stuhlmann. **Inflammatory responses in the placenta upon SARS-CoV-2 infection late in pregnancy**. *iScience* (2022). doi:10.1016/j.isci.2022.104223
 29. Jiwoon Park, Jonathan Foox, Tyler Hether, David C. Danko, Sarah Warren, Youngmi Kim, Jason Reeves, Daniel J. Butler, Christopher Mozsary, Joel Rosiene, Alon Shaiber, Evan E. Afshin, Matthew MacKay, André F. Rendeiro, Yaron Bram, Vasuretha Chandar, Heather Geiger, Arryn Craney, Priya Velu, Ari M. Melnick, Iman Hajirasouliha, Afshin Beheshti, Deanne Taylor, Amanda Saravia-Butler, Urminder Singh, Eve Syrkin Wurtele, Jonathan Schisler, Samantha Fennessey, André Corvelo, Michael C. Zody, Soren Germer, Steven Salvatore, Shawn Levy, Shixiu Wu, Nicholas P. Tatonetti, Sagi Shapira, Mirella Salvatore, Lars F. Westblade, Melissa Cushing, Hanna Rennert, Alison J. Kriegel, Olivier Elemento, Marcin Imielinski, Charles M. Rice, Alain C. Borczuk, Cem Meydan, Robert E. Schwartz, Christopher E. Mason. **System-wide transcriptome damage and tissue identity loss in COVID-19 patients**. *Cell Reports Medicine* (2022). doi:10.1016/j.xcrm.2022.100522
 28. Hussein Alnajar*, Hiranmayi Ravichandran*, André F. Rendeiro, Kentaro Ohara, Wael Al Zoughbi, Jyothi Manohar, Noah Greco, Michael Sigouros, Jesse Fox, Emily Muth, Samuel Angiuoli, Bishoy Faltas, Michael Shusterman, Cora N. Sternberg, Olivier Elemento, Juan Miguel Mosquera. **Tumor-Immune Microenvironment Revealed by Imaging Mass Cytometry in a Metastatic Sarcomatoid Urothelial Carcinoma with a Prolonged Response to Pembrolizumab**. *Cold Spring Harbor Molecular Case Studies* (2022). doi:10.1101/mcs.a006151
 27. André F. Rendeiro, Charles Kyriakos Vorkas, Jan Krumsiek, Harjot Singh, Shashi N Kapadia, Luca Vincenzo Cappelli, Maria Teresa Cacciapuoti, Giorgio Inghirami, Olivier Elemento, Mirella Salvatore. **Metabolic**

- and immune markers for precise monitoring of COVID-19 severity and treatment.** *Frontiers in Immunology* (2021). doi:10.3389/fimmu.2021.809937
26. Nathan C. Sheffield, Micha Stolarczyk, Vincent P. Reuter, André F. Rendeiro. **Linking big biomedical datasets to modular analysis with Portable Encapsulated Projects.** *GigaScience* (2021). doi:10.1093/gigascience/giab077
 25. Laurienne Edgar, Naveed Akbar, Adam T Braithwaite, Thomas Krausgruber, Héctor Gallart-Ayala, Jade Bailey, Alastair L Corbin, Tariq E Khoiratty, Joshua T Chai, Mohammad Alkhalil, André F. Rendeiro, Klemen Ziberna, Ritu Arya, Thomas J Cahill, Christoph Bock, Jurga Laurencikienė, Mark J Crabtree, Madeleine E Lemieux, Niels P Riksen, Mihai G Netea, Craig E Wheelock, Keith M Channon, Mikael Rydén, Irina A Udalova, Ricardo Carnicer, Robin P Choudhury. **Hyperglycaemia Induces Trained Immunity in Macrophages and Their Precursors and Promotes Atherosclerosis.** *Circulation* (2021). doi:10.1161/CIRCULATIONAHA.120.046464
 24. Paul Datlinger*, André F. Rendeiro*, Thorina Boenke, Thomas Krausgruber, Daniele Barreca, Christoph Bock. **Ultra-high throughput single-cell RNA sequencing by combinatorial fluidic indexing.** *Nature Methods* (2021). doi:10.1038/s41592-021-01153-z
 23. Peter Peneder, Adrian Stütz, Didier Surdez, Manuela Krumbholz, Sabine Semper, Mathieu Chicard, Nathan Sheffield, Gaele Pierron, Eve Lapouble, Marcus Tötzl, Bekir Ergüner, Daniele Barreca, André F. Rendeiro, Abbas Agaimy, Heidrun Boztug, Gernot Engstler, Michael Dworzak, Marie Bernkopf, Sabine Taschner-Mandl, Inge Ambros, Ola Myklebost, Perrine Marec-Berard, Susan Burchill, Bernadette Brennan, Sandra Strauss, Jeremy Whelan, Gudrun Schleiermacher, Christiane Schaefer, Uta Dirksen, Caroline Hutter, Kjetil Boye, Peter Ambros, Olivier Delattre, Markus Metzler, Christoph Bock, Eleni Tomazou. **Multimodal analysis of cell-free DNA whole genome sequencing for pediatric cancers with low mutational burden.** *Nature Communications* (2021). doi:10.1038/s41467-021-23445-w
 22. Johannes C. Melms*, Jana Biermann*, Huachao Huang*, Yiping Wang*, Ajay Nair*, Somnath Tagore*, Igor Katsyv*, André F. Rendeiro*, Amit Dipak Amin*, Denis Schapiro, Chris J. Frangieh, Adrienne M. Luoma, Aveline Filliol, Yinshan Fang, Hiranmayi Ravichandran, Mariano G. Clausi, George A. Alba, Meri Rogava, Sean W. Chen, Patricia Ho, Daniel T. Montoro, Adam E. Kornberg, Arnold S. Han, Mathieu F. Bakhoun, Niroshana Anandasabapathy, Mayte Suárez-Fariñas, Samuel F. Bakhoun, Yaron Bram, Alain Borczuk, Xinzhen V. Guo, Jay H. Lefkowitz, Charles Marboe, Stephen. M. Lagana, Armando Del Portillo, Emmanuel Zorn, Glen S. Markowitz, Robert F. Schwabe, Robert E. Schwartz, Olivier Elemento, Anjali Saqi, Hanina Hibshoosh, Jianwen Que, Benjamin Izar. **A molecular single-cell lung atlas of lethal COVID-19.** *Nature* (2021). doi:10.1038/s41586-021-03569-1
 21. André F. Rendeiro*, Hiranmayi Ravichandran*, Yaron Bram, Vasuretha Chandar, Junbum Kim, Cem Meydan, Jiwoon Park, Jonathan Foox, Tyler Hether, Sarah Warren, Youngmi Kim, Jason Reeves, Steven Salvatore, Christopher E. Mason, Eric C. Swanson, Alain C. Borczuk, Olivier Elemento, Robert E. Schwartz. **The spatial landscape of lung pathology during COVID-19 progression.** *Nature* (2021). doi:10.1038/s41586-021-03475-6
 20. Sandra Schick, Sarah Grosche, Katharina Eva Kohl, Danica Drpic, Martin G. Jaeger, Nara C. Marella, Hana Imrichova, Jung-Ming G. Lin, Gerald Hofstätter, Michael Schuster, André F. Rendeiro, Anna Koren, Mark Petronczki, Christoph Bock, André C. Müller, Georg E. Winter, Stefan Kubicek. **Acute BAF perturbation causes immediate changes in chromatin accessibility.** *Nature Genetics* (2021). doi:10.1038/s41588-021-00777-3
 19. André F. Rendeiro, Joseph Casano, Charles Kyriakos Vorkas, Harjot Singh, Ayana Morales, Robert A DeSimone, Grant B Ellsworth, Rosemary Soave, Shashi N Kapadia, Kohta Saito, Christopher D Brown, JingMei Hsu, Christopher Kyriakides, Steven Chui, Luca Cappelli, Maria Teresa Cacciapuoti, Wayne Tam, Lorenzo Galluzzi, Paul D Simonson, Olivier Elemento, Mirella Salvatore, Giorgio Inghirami. **Profiling of immune dysfunction in COVID-19 patients allows early prediction of disease progression.** *Life Science Alliance* (2020). doi:10.26508/lsa.202000955
 18. Alexander Swoboda, Robert Soukup, Oliver Eckel, Katharina Kinslechner, Bettina Wingelhofer, David Schörghofer, Christina Sternberg, Ha T T Pham, Maria Vallianou, Jaqueline Horvath, Dagmar Stoiber, Lukas Kenner, Lionel Larue, Valeria Poli, Friedrich Beermann, Takashi Yokota, Stefan Kubicek, Thomas Krausgruber, André F. Rendeiro, Christoph Bock, Rainer Zenz, Boris Kovacic, Fritz Aberger, Markus Hengstschläger, Peter Petzelbauer, Mario Mikula, Richard Moriggl. **STAT3 promotes melanoma metastasis by CEBP-induced repression of the MITF pathway.** *Oncogene* (2020). doi:10.1038/s41388-020-01584-6

17. Thomas Krausgruber, Nikolaus Fortelny, Victoria Fife-Gernedl, Martin Senekowitsch, Linda C. Schuster, Alexander Lercher, Amelie Nemc, Christian Schmidl, André F. Rendeiro, Andreas Bergthaler, Christoph Bock. **Structural cells are key regulators of organ-specific immune responses.** *Nature* (2020). doi:10.1038/s41586-020-2424-4
16. Rainer Hubmann, Susanne Schnabl, Mohammad Araghi, Christian Schmidl, André F. Rendeiro, Martin Hilgarth, Dita Demirtas, Farghaly Ali, Philipp B. Staber, Peter Valent, Christoph Zielinski, Ulrich Jäger, Medhat Shehata. **Targeting Nuclear NOTCH2 by Gliotoxin Recovers a Tumor-Suppressor NOTCH3 Activity in CLL.** *Cells* (2020). doi:10.3390/cells9061484
15. Elizabeth C Rosser, Christopher J.M. Piper, Diana E Matei, Paul A. Blair, André F. Rendeiro, Michael Orford, Dagmar G. Alber, Thomas Krausgruber, Diego Catalan, Nigel Klein, Jessica J. Manson, Ignat Drozdov, Christoph Bock, Lucy R Wedderburn, Simon Eaton, Claudia Mauri. **Microbiota-Derived Metabolites Suppress Arthritis by Amplifying Aryl-Hydrocarbon Receptor Activation in Regulatory B Cells.** *Cell Metabolism* (2020). doi:10.1016/j.cmet.2020.03.003
14. André F. Rendeiro*, Thomas Krausgruber*, Nikolaus Fortelny, Fangwen Zhao, Thomas Penz, Matthias Farlik, Linda C. Schuster, Amelie Nemc, Szabolcs Tasnády, Marienn Réti, Zoltán Mátrai, Donat Alpar, Csaba Bödör, Christian Schmidl, Christoph Bock. **Chromatin mapping and single-cell immune profiling define the temporal dynamics of ibrutinib drug response in CLL.** *Nature Communications* (2020). doi:10.1038/s41467-019-14081-6
13. Michael Delacher, Charles D Imbusch, Agnes Hotz-Wagenblatt, Jan-Philipp Mallm, Katharina Bauer, Malte Simon, Dania Riegel, André F. Rendeiro, Sebastian Bittner, Lieke Sanderink, Asmita Pant, Lisa Schmidleithner, Kathrin L Braband, Bernd Echtenachter, Alexander Fischer, Valentina Giunchiglia, Petra Hoffmann, Matthias Edinger, Christoph Bock, Michael Rehli, Benedikt Brors, Christian Schmidl, Markus Feuerer. **Precursors for Nonlymphoid-Tissue Treg Cells Reside in Secondary Lymphoid Organs and Are Programmed by the Transcription Factor BATF.** *Immunity* (2020). doi:10.1016/j.immuni.2019.12.002
12. Christopher JM Piper, Elizabeth C Rosser, Kristine Oleinika, Kiran Nistala, Thomas Krausgruber, André F. Rendeiro, Aggelos Banos, Ignat Drozdov, Matteo Villa, Scott Thomson, Georgina Xanthou, Christoph Bock, Brigitta Stockinger, Claudia Mauri. **Aryl Hydrocarbon Receptor Contributes to the Transcriptional Program of IL-10-Producing Regulatory B Cells.** *Cell Reports* (2019). doi:10.1016/j.celrep.2019.10.018
11. Florian Puhm, Taras Afonyushkin, Ulrike Resch, Georg Obermayer, Manfred Rohde, Thomas Penz, Michael Schuster, Gabriel Wagner, André F. Rendeiro, Imene Melki, Christoph Kaun, Johann Wojta, Christoph Bock, Bernd Jilma, Nigel Mackman, Eric Boilard, Christoph J Binder. **Mitochondria are a subset of extracellular vesicles released by activated monocytes and induce type I IFN and TNF responses in endothelial cells.** *Circulation Research* (2019). doi:10.1161/CIRCRESAHA.118.314601
10. Sandra Schick, André F. Rendeiro, Kathrin Runggatscher, Anna Ringler, Bernd Boidol, Melanie Hinkel, Peter Májek, Loan Vulliard, Thomas Penz, Katja Parapatits, Christian Schmidl, Jörg Menche, Guido Boehmelt, Mark Petronczki, André C. Müller, Christoph Bock, Stefan Kubicek. **Systematic characterization of BAF mutations provides insights into intracomplex synthetic lethalties in human cancers.** *Nature Genetics* (2019). doi:10.1038/s41588-019-0477-9
9. Sara Sdelci, André F. Rendeiro, Philipp Rathert, Wanhui You, Jung-Ming G. Lin, Anna Ringler, Gerald Hofstätter, Herwig P. Moll, Bettina Gürtl, Matthias Farlik, Sandra Schick, Freya Klepsch, Matthew Oldach, Pisanu Buphamalai, Fiorella Schischlik, Peter Májek, Katja Parapatits, Christian Schmidl, Michael Schuster, Thomas Penz, Dennis L. Buckley, Otto Hudecz, Richard Imre, Shuang-Yan Wang, Hans Michael Maric, Robert Kralovics, Keiryn L. Bennett, Andre C. Müller, Karl Mechtler, Jörg Menche, James E. Bradner, Georg E. Winter, Kristaps Klavins, Emilio Casanova, Christoph Bock, Johannes Zuber, Stefan Kubicek. **MTHFD1 interaction with BRD4 links folate metabolism to transcriptional regulation.** *Nature Genetics* (2019). doi:10.1038/s41588-019-0413-z
8. Christian Schmidl*, Gregory I Vladimer*, André F. Rendeiro*, Susanne Schnabl*, Thomas Krausgruber, Christina Taubert, Nikolaus Krall, Tea Pemovska, Mohammad Araghi, Berend Snijder, Rainer Hubmann, Anna Ringler, Kathrin Runggatscher, Dita Demirtas, Oscar Lopez de la Fuente, Martin Hilgarth, Cathrin Skrebs, Edit Porpaczy, Michaela Gruber, Gregor Hoermann, Stefan Kubicek, Philipp B Staber, Medhat Shehata, Giulio Superti-Furga, Ulrich Jäger, Christoph Bock. **Combined chemosensitivity and chromatin profiling prioritizes drug combinations in CLL.** *Nature Chemical Biology* (2019). doi:10.1038/s41589-018-0205-2

7. Tahsin Stefan Barakat, Florian Halbritter, Man Zhang, [André F. Rendeiro](#), Christoph Bock, Ian Chambers. **Functional dissection of the enhancer repertoire in human embryonic stem cells**. *Cell Stem Cell* (2018). doi:10.1016/j.stem.2018.06.014
6. Paul Datlinger, [André F. Rendeiro*](#), Christian Schmidl*, Thomas Krausgruber, Peter Traxler, Johanna Klughammer, Linda C Schuster, Amelie Kuchler, Donat Alpar, Christoph Bock. **Pooled CRISPR screening with single-cell transcriptome readout**. *Nature Methods* (2017). doi:10.1038/nmeth.4177
5. Roman A Romanov, Amit Zeisel, Joanne Bakker, Fatima Girach, Arash Hellysaz, Raju Tomer, Alán Alpár, Jan Mulder, Frédéric Clotman, Erik Keimpema, Brian Hsueh, Ailey K Crow, Henrik Martens, Christian Schwindling, Daniela Calvigioni, Jaideep S Bains, Zoltán Máté, Gábor Szabó, Yuchio Yanagawa, Ming-Dong Zhang, [André F. Rendeiro](#), Matthias Farlik, Mathias Uhlén, Peer Wulff, Christoph Bock, Christian Broberger, Karl Deisseroth, Tomas Hökfelt, Sten Linnarsson, Tamas L Horvath, Tibor Harkany. **Molecular interrogation of hypothalamic organization reveals distinct dopamine neuronal subtypes**. *Nature Neuroscience* (2016). doi:10.1038/nn.4462
4. Clara Jana-Lui Busch, Tim Hendriks, David Weismann, Sven Jäckel, Sofie M. A. Walenbergh, [André F. Rendeiro](#), Juliane Weiss, Florian Puhm, Anastasiya Hladik, Laura Göderle, Nikolina Papac-Milicevic, Gerald Haas, Vincent Millischer, Saravanan Subramaniam, Sylvia Knapp, Keiryn L. Bennett, Christoph Bock, Christoph Reinhardt, Ronit Shiri-Sverdlov, Christoph J. Binder. **Malondialdehyde epitopes are sterile mediators of hepatic inflammation in hypercholesterolemic mice**. *Hepatology* (2017). doi:10.1002/hep.28970
3. [André F. Rendeiro*](#), Christian Schmidl*, Jonathan C. Strefford*, Renata Walewska, Zadi Davis, Matthias Farlik, David Oscier, Christoph Bock. **Chromatin accessibility maps of chronic lymphocytic leukaemia identify subtype-specific epigenome signatures and transcription regulatory networks**. *Nature Communications*. 7:11938 (2016). doi:10.1038/ncomms11938
2. Christian Schmidl*, [André F. Rendeiro*](#), Nathan C Sheffield, Christoph Bock. **ChIPmentation: fast, robust, low-input ChIP-seq for histones and transcription factors**. *Nature Methods* (2015). doi:10.1038/nmeth.3542
1. Michaela Schwaiger, Anna Schönauer, [André F. Rendeiro](#), Carina Pribitzer, Alexandra Schauer, Anna Gilles, Johannes Schinko, David Fredman, and Ulrich Technau. **Evolutionary conservation of the eumetazoan gene regulatory landscape**. *Genome Research* (2014). doi:10.1101/gr.162529.113

Additional publications

2. Dörte Symmank, Felix Clemens Richter, [André F. Rendeiro](#). **Navigating the thymic landscape through development: from cellular atlas to tissue cartography**. *Genes & Immunity* (2024). doi:10.1038/s41435-024-00257-8
1. Fabian J. Theis, Daniel Dar, Roser Vento-Tormo, Sanja Vickovi, Linghua Wang, Luciane T. Kagohara, [André F. Rendeiro](#), Johanna A. Joyce. **What do you most hope spatial molecular profiling will help us understand? Part 1**. *Cell Systems* (2023). doi:10.1016/j.cels.2023.05.009

Patents

Aproval pending

1. **Methods for determining biological age and/or biological age gap**. *European Patent Office*, October 2024.

Communications

Conference talks

19. **The histological basis of biological aging**. *The annual conference of the Austrian Platform for Precision Medicine, Vienna, Austria*, December 2024.
18. **A cross anatomical view of aging biology and pathology**. *The IX Siena Think Tank. A vision of Immunooncology, Siena, Italy*, October 2024.
17. **A cross anatomical view of aging biology and pathology**. *VitaDAO minisymposium: Aging across scales and systems, Vienna, Austria*, June 2024.
16. **A cross anatomical view of aging biology and pathology**. *Department of Mathematics, University of Oxford, UK*, May 2024.

15. **AI & histopathology: State-of-the-art and next horizons.** *2024 EU-LIFE community meeting, Vienna, Austria, April 2024.*
14. **Tissue-level Prediction of Biological Age and Pathology Incidence.** *Keystone Symposia on Single-Cell Biology: Tissue Genomics, Technologies and Disease, Whistler, Canada, January 2024.*
13. **Spatially and temporally resolved COVID-19 pathology.** *33rd Annual Conference of the German Society for Cytometry, October 2023.*
12. **Multiplexed and spatial biology: connecting spatial scales.** *3rd International Danube Symposium on Whole Person Research, Vienna, Austria, September 2023.*
11. **Unsupervised discovery of tissue architecture with graphs.** *Biological Data Science Meeting, Cold Spring Harbour Laboratory, October 2022.*
10. **Spatial Analysis of Tissues and Organs.** *VBC PhD Symposium "Pushing Boundaries", Vienna, Austria, October 2022.*
9. **The spatial landscape of lung pathology during COVID-19 progression.** *IMC Summit, October 2021, Singapore.*
8. **Chromatin mapping and single-cell immune profiling define the temporal dynamics of Ibrutinib response in CLL.** *Young Scientist Association of the Medical University of Vienna PhD Symposia, June 2019, Vienna, Austria.*
7. **Chromatin mapping and single-cell immune profiling define the temporal dynamics of Ibrutinib response in CLL.** *Frontiers in Single Cell Genomics Meeting - Cold Spring Harbour Asia, November 2018, Suzhou, China.*
6. **CROP-seq: updates on the single cell CRISPR screening method.** *10X User Group Meeting 2018, April 2018, EMBL, Heidelberg, Germany.*
5. **Pooled CRISPR screening with single-cell transcriptome readout.** *SLAS 2018, February 2018, San Diego, USA.*
4. **Pooled CRISPR screening with single-cell transcriptome readout.** *Illumina User Group Meeting 2017, February 2018, Bern, Switzerland.*
3. **Large-scale ATAC-seq profiling to identify disease subtypes, regulatory networks and monitoring treatment in CLL.** *Illumina User Group Meeting 2017, February 2018, Cologne, Germany.*
2. **Pooled CRISPR screening with single-cell transcriptome readout.** *Ascona Workshop 2017, May 2017, Ascona, Switzerland.*
1. **Evolutionary conservation of the eumetazoan gene regulatory landscape.** *XVIII Portuguese Genetics Society Meeting, June 2013. Porto, Portugal*

Conference posters

5. **Chromatin mapping and single-cell immune profiling define the temporal dynamics of ibrutinib drug response in chronic lymphocytic leukemia.** *SCOG Workshop Computational Single Cell Genomics, May 2019. Munich, Germany. doi:10.6084/m9.figshare.7892663.v1*
4. **Combined chromatin accessibility and chemosensitivity profiling identifies targetable pathways and rational drug combinations in Ibrutinib-treated chronic lymphocytic leukemia.** *Young Scientist Association of the Medical University of Vienna PhD Symposia, June 2017. Vienna, Austria.*
3. **Large-scale chromatin profiling uncovers heterogeneity of molecular phenotypes and gene regulatory networks of chronic lymphocytic leukemia.** *Young Scientist Association of the Medical University of Vienna PhD Symposia, June 2016, Vienna, Austria. 10.6084/m9.figshare.3479528.v1 Best poster award in "Malignant Diseases" category.*
2. **Large-scale chromatin profiling uncovers heterogeneity of molecular phenotypes and gene regulatory networks of chronic lymphocytic leukemia.** *Keystone Symposia on Chromatin and Epigenetics, March 2016, Whistler, Vancouver, Canada. https://doi.org/10.6084/m9.figshare.3479528.v1*
1. **Identification of cis-regulatory elements in the sea anemone *Nematostella vectensis*.** *Evonet Symposium, September 2012, Vienna Austria. doi:10.6084/m9.figshare.107026*

Additional experience

Teaching

- 2025 - Invited lecture: Weill Cornell Medicine clinical genomics course: "Single-Molecule & Spatial Sequencing: Methods & Applications"
- 2024 - Bioinformatics course, CeMM PhD Program, Vienna - co-organizer, re-occurs every year
- 2022 - Bioinformatics course, CeMM PhD Program, Vienna - one day workshop, re-occurs every year
- 2022 - "Spatial Analysis of Tissues and Organs" lecture, CeMM PhD Program, Vienna - re-occurs every year
- 2022 - Invited lecture: "Spatial Analysis of Tissues and Organs", course "Biomedical Informatics & Genomic Medicine", MSc Molecular Precision Medicine, Medical University of Vienna - re-occurs every semester

Supervision and Mentoring

- 2024/02 - Lisa Kleissl, Postdoc - CeMM
- 2023/10 - Yimin Zheng, Postdoc - CeMM
- 2023/09 - Tamas Veres, PhD student - CeMM
- 2023/07 - 2023/07 Alessandro Rodia, High school student intern - CeMM
- 2023/05 - Gabriel Meca Laguna, Master student - SENS Research Foundation, co-supervisor
- 2022/09 - Ernesto Abila, PhD student - CeMM
- 2022/09 - Iva Buljan, PhD student - CeMM
- 2022/01 - 2022/04 Zhuoran (Karen) Xu, Data Science Statistician - Weill Cornell Medical College
- 2021/07 - 2022/10 Kelsey Chetnik, Staff Associate - Weill Cornell Medical College
- 2020/09 - 2024/03 Junbum (June) Kim, Graduate student - Weill Cornell Graduate School of Medical Sciences

Courses attended

- 2023/06 ERC grant writing masterclass - EU-Life
- 2022/11 EMBO Lab Leadership Course - EMBO
- 2022/10 Motivation and Guidance of students during diploma or PhD thesis - Medical University of Vienna, Austria
- 2022/01 PI Crash Course: Skills for Future or New Lab Leaders - Columbia University, NY, USA
- 2021/04 Probabilistic Modeling in Genomics, Virtual meeting - Cold Spring Harbor, NY, USA
- 2015/09 Summer School on Machine Learning for Personalised Medicine - Marie Curie Initial Training Network, Manchester, UK
- 2012/09 Scientific writing course - University of Aveiro, Portugal

Associative/Administrative

- 2010/09 - 2012/06 Member of the Biology department counsel, University of Aveiro, Portugal
- 2009/09 - 2011/06 Member of the undergraduate Biology committee, University of Aveiro, Portugal

Software

- LazySlide A package for modular and scalable whole slide image analysis:
<https://github.com/RendeiroLab/LazySlide>
- WSIData Efficient data structures and IO for whole slide image analysis:
<https://github.com/RendeiroLab/WSIData>
- wsf A Python package for the processing of whole slide histopathological images:
<https://github.com/RendeiroLab/wsf>
- cytomine_utils A package with utilities to interact with Cytomine APIs:
https://github.com/RendeiroLab/cytomine_utils
- IMC A package for the analysis of imaging mass cytometry data:
<https://github.com/ElementoLab/imc>
- imcpipeline A pipeline for the preprocessing of imaging mass cytometry data:
<https://github.com/ElementoLab/imcpipeline>

imctransfer	Program for the robust, parallel transfer of raw IMC data between machines: https://github.com/ElementoLab/imctransfer
page-enrichment	A Python implementation of the Parametric Analysis of Gene Set Enrichment (PAGE): https://github.com/afrendeiro/page-enrichment
ngs-toolkit	A toolkit for the analysis of NGS data: https://github.com/afrendeiro/toolkit
peppy	A package to work with Portable Encapsulated Projects (PEP) in Python: https://github.com/pepkit/peppy
looper	A job controller for Portable Encapsulated Projects (PEP): https://github.com/pepkit/looper
open_pipelines	Pipelines for a variety of NGS data: https://github.com/epigen/open_pipelines
ngstk	A collection of CLI tools for bioinformatics workflows: https://github.com/pepkit/ngstk

--- Licenses and certifications

2021/04 - 2025/04	Biomedical Research Investigators and Key Personnel , <i>Credential ID: 41194853</i> CITI Program
2021/04 - 2025/04	Good Clinical Practice , <i>Credential ID: 41194854</i> CITI Program
2020/06 - 2026/01	Responsible Conduct of Research for Faculty Weill Cornell Medical College
2020/12 - 12-2025	Responsible Conduct of Research Tri-Institutional program: MSK Cancer Center, Weill Cornell Medical College, Rockefeller University

--- Associations

2023 -	Austrian Association of Molecular Life Sciences and Biotechnology (ÖGMBT)
2022 -	Vienna Cell Network
2020 - 2022	New York Academy of Sciences
2015 - 2018	European Hematology Association (EHA)

Updated on 2025-06-01