Curriculum Vitae

Name	**Prof. Dr. Viola Priesemann**
Affiliation	Max-Planck-Institute for Dynamics and Self-Organization and Georg-August-University Göttingen
Address	Am Fassberg 17, 37077 Göttingen, Germany
Website	www.viola-priesemann.de
Wikipedia	https://de.wikipedia.org/wiki/Viola_Priesemann
Google Scholar	https://scholar.google.de/citations?user=5oK8Ek4AAAAJ

Academic Career

2022 -	**Professor** (W3), Department of Physics, University of Göttingen
2020 -	**Board Member**, Campus Institute for Data Science
2017 -	**Max Planck Research Group Leader** Max Planck Institute for Dynamics and Self-Organization Göttingen, Germany
2017	**Guest Researcher** at the Ernst Strüngmann Institute Frankfurt, Germany
2016/2017	**Parental leave**
2016 - 2017	Start-Up Phase of the Max-Planck-Research-Group
2014 - 2016	**Bernstein Fellow** Bernstein Center for Computational Neuroscience, Göttingen & Max Planck Institute for Dynamics and Self-Organization Göttingen, Germany
2013 - 2014	**PostDoc** with Theo Geisel **Max Planck Institute for Dynamics and Self-Organization** Göttingen, Germany
2009 - 2013	**PhD Student** **Max Planck Institute for Brain Research**, Frankfurt and **Frankfurt Institute for Advanced Studies** (FIAS), Germany Supervisors: Gilles Laurent and Jochen Triesch
2009	Research Project on Insect Olfaction with Gilles Laurent **Caltech, Pasadena**, CA, USA
2008 - 2009	Research Project on Neural Networks with Christian Machens **École Normale Supérieure, Paris**, France

Education

23.09.2013	**PhD in Physics** "Subsampling in Critical Systems" Faculty of Physics, Goethe University Frankfurt, Germany
2010	**Summer Course (8 weeks) "Neural Systems and Behavior"** **Marine Biology Laboratories, Woods Hole**, MA, USA funded by Thomas B. Grave and Elizabeth F. Grave Scholarship
2001 - 2008	**Diploma (Master) in Physics** Technical University Darmstadt, Germany
2006 - 2007	**Diploma Thesis** Max Planck Institute for Brain Research, Frankfurt, Germany Department of Wolf Singer
2004 - 2005	**Erasmus Exchange Student**, full academic year, Lisbon, Portugal Universidade Nova de Lisboa and Instituto Superior Técnico de Lisboa

Grants & Scholarships (Selection)

2025 -	**Principle Investigator**, SFB 1690 "Disease Mechanisms and Functional Restoration of Sensory and Motor Systems"
2024 -	**Principle Investigator**, RTG 2906 "Curiosity"
2024 -	**Principle Investigator** SPP 2205 "Evolutionary Optim. of Neuronal Processing"
2022 - 2025	**Main Coordinator and PI**, BMBF Project "infoXpand"
2022 - 2025	**Section Coordinator and PI**, BMBF Project "RESPINOW"
2022 -	**Principal Investigator** in the SFB 1528 "Cognition of Interaction"
2022 -	**Principal Investigator** in the SFB 1286 "Quantitative Synaptology"
2020 - 2024	**Principle Investigator** SPP 2205 "Evolutionary Optim. of Neuronal Processing"
2020 -	**Principle Investigator**, COVID project, Max Planck Society
2020 - 2021	**Principle Investigator, NUM** - Netzwerk Universitätsmedizin
2020 -	Member of the **Cluster of Excellence** Multiscale Bioimaging
2016 - 2018	**Principal Investigator** of a Project in the **Phys2Med Initiative** in preparation of the Excellence Initiative of the University and Medical Faculty, Göttingen
2015/2016	**Research Stay at the Ben Gurion University**, Beer-Sheva, Israel
2015	**Successful Competition for a Max Planck Research Group**
March/Apr. 2015	**Research stay at the TECHNION**, Haifa, Israel supported by the "Deutsche Technion Gesellschaft e.V."
2014	Appointed as **Bernstein Fellow** Independent research position for two years, incl. consumables

Awards & Distinctions

2024 - 2025	**Präsidium**, "Die Junge Akademie"
2024	**Young Scientist Award for Socio- and Econophysics**, DPG
2024 -	**External Faculty**, Complexity Hub Vienna, Austria
2023	**Member**, Göttingen Academy of Sciences and Humanities
2022	**Lise-Meitner-Lecture** of the Austrian and German Physical Societies (ÖPG & DPG)
2022	**Arthur-Burkhardt-Award**
2022	**Minerva-Award**, Jülich
2022	Offer **Director** Position, Helmholtz Munich
2021	**Dannie-Heineman-Award**, Göttingen Academy of Sciences and Humanities
2021	**Wissenschaftspreis Niedersachsen**
2021	**Hans-Jensen-Lecture**, University of Heidelberg
2021	**Offer W3 Professorship (Ruf):** Department of Physics, University of Göttingen (accepted 2022)
2021 -	**Member, "Die Junge Akademie"** at the Berlin-Brandenburg Academy of Sciences and Humanities (BBAW) and the German National Academy of Sciences Leopoldina
2021	**Medaille für Naturwissenschaftliche Publizistik** of the DPG
2021	**Communitas-Award** of the Max Planck Society
2020	**Invited Talk, Senate of the Max Planck Society**
2020	**Offer W3 Professor**, Department of Physics, University of Heidelberg
2016	**German-Israel Foundation** (GIF) Young Investigator Award
2015 - 2020	**Fellow, Schiemann Kolleg** of the Max Planck Society

Service to the Community

2024 -	**Evaluation Committe** for Collaborative Research Grants (CRC), Research Institutions (abroad), etc.
2023 -	**Hiring Committes** for Professor Positions
2023 -	**Evaluation Commiette** Life Science Xplained award
2021 - 2023	**Member of the national expert panel on COVID-19** of the German Federal Government
2020 -	Author or initiator of **position papers** on COVID-19 published at The Lancet, with the Max Planck Society, and others
2022 -	Author of **position papers** on COVID-19 & digitalization, and on gender equality, for the Academia Leopoldina
2020 -	**Political advising and public outreach** on COVID-19 with numerous interviews in print, radio, TV & regular press briefings
2019 - 2022	**Member**, hiring committee for W2-positions within the Max Planck Society
2019 - 2023	**Representative of the Scientific Staff**, MPI for Dynamics and Self-Organization
2018 - 2025	**Organization** and Initialization, Symposium: Göttingen Neural Networking Day
2018 -	**Organization** of Workshops at CNS, FENS, and DPG conferences
2017	**Organization Committee** of the Bernstein Conference
2017 - 2023	**Faculty, Start Training Program** in Computational Neuroscience
2016-2022	Yearly organization of an **Information Theory Workshop** at the CNS
since 2016-	**Reviewing** for Frontiers, Nature Publishing group, Science (and ass. journals), Physical R

List of Publications (2024)

The current list of publications can be found on Google Scholar [link].

[1] A. Reitenbach, F. Sartori, S. Banisch, A. Golovin, A. Calero Valdez, M. Kretzschmar, V. **Priesemann**, and M. Maes, "Coupled infectious disease and behavior dynamics. a review of model assumptions," ***Reports on Progress in Physics***, 2024.

[2] K. Y. Oróstica, S. B. Mohr, J. Dehning, S. Bauer, D. Medina-Ortiz, E. N. Iftekhar, K. Mujica, P. C. Covarrubias, S. Ulloa, A. E. Castillo *et al.*, "Early mutational signatures and transmissibility of sars-cov-2 gamma and lambda variants in chile," ***Scientific Reports***, vol. 14, no. 1, p. 16000, 2024.

[3] S. Reshetniak, C. A. Bogaciu, S. Bonn, N. Brose, B. H. Cooper, E. D'Este, M. Fauth, R. Fernández-Busnadiego, M. Fiosins, A. Fischer *et al.*, "The synaptic vesicle cluster as a controller of pre-and postsynaptic structure and function," ***The Journal of Physiology***, 2024.

[4] L. Rudelt, D. González Marx, F. P. Spitzner, B. Cramer, J. Zierenberg, and V. **Priesemann**, "Signatures of hierarchical temporal processing in the mouse visual system," ***PLOS Computational Biology***, vol. 20, no. 8, p. e1012355, 2024.

[5] P. Doenges, T. Götz, N. Kruchinina, T. Krüger, K. Niedzielewski, V. **Priesemann**, and M. Schäfer, "Sir model for households," ***SIAM Journal on Applied Mathematics***, vol. 84, no. 4, pp. 1460–1481, 2024.

[6] J. M. Rowland, T. L. Van Der Plas, M. Loidolt, R. M. Lees, J. Keeling, J. Dehning, T. Akam, V. **Priesemann**, and A. M. Packer, "Propagation of activity through the cortical hierarchy and perception are determined by neural variability," ***Nature Neuroscience***, vol. 26, no. 9, pp. 1584–1594, Sep. 2023. [Online]. Available: https://www.nature.com/articles/s41593-023-01413-5

[7] F. A. Mikulasch, L. Rudelt, M. Wibral, and V. **Priesemann**, "Where is the error? hierarchical predictive coding through dendritic error computation," ***Trends in Neurosciences***, vol. 46, no. 1, pp. 45–59, 2023.

[8] H. Yamamoto, F. P. Spitzner, T. Takemuro, V. Buendía, H. Murota, C. Morante, T. Konno, S. Sato, A. Hirano-Iwata, A. Levina, V. **Priesemann**, M. A. Muñoz, J. Zierenberg, and J. Soriano, "Modular architecture facilitates noise-driven control of synchrony in neuronal networks," ***Science Advances***, vol. 9, no. 34, Aug. 2023. [Online]. Available: https://doi.org/10.1126/sciadv.ade1755

[9] F. Davenport, J. Gallacher, Z. Kourtzi, I. Koychev, P. M. Matthews, N. P. Oxtoby, L. M. Parkes, V. **Priesemann**, J. B. Rowe, S. W. Smye *et al.*, "Neurodegenerative disease of the brain: a survey of interdisciplinary approaches," ***Journal of the Royal Society Interface***, vol. 20, no. 198, p. 20220406, 2023.

[10] J. Dehning, S. B. Mohr, S. Contreras, P. Dönges, E. N. Iftekhar, O. Schulz, P. Bechtle, and V. **Priesemann**, "Impact of the euro 2020 championship on the spread of covid-19," ***Nature Communications***, vol. 14, no. 1, p. 122, 2023.

[11] S. Contreras, K. Y. Oróstica, A. Daza-Sanchez, J. Wagner, P. Dönges, D. Medina-Ortiz, M. Jara, R. Verdugo, C. Conca, V. **Priesemann** *et al.*, "Model-based assessment of sampling protocols for infectious disease genomic surveillance," ***Chaos, Solitons & Fractals***, vol. 167, p. 113093, 2023.

[12] J. Zierenberg, F. P. Spitzner, J. Dehning, V. **Priesemann**, M. Weigel, and M. Wilczek, "How contact patterns destabilize and modulate epidemic outbreaks," ***New Journal of Physics***, vol. 25, no. 5, p. 053033, May 2023. [Online]. Available: https://doi.org/10.1088/1367-2630/acd1a7

[13] S. Contreras, E. N. Iftekhar, and V. **Priesemann**, "From emergency response to long-term management: the many faces of the endemic state of COVID-19," ***The Lancet Regional Health - Europe***, vol. 30, p. 100664, Jul. 2023. [Online]. Available: https://doi.org/10.1016/j.lanepe.2023.100664

[14] A. Kekić, J. Dehning, L. Gresele, J. von Kügelgen, V. **Priesemann**, and B. Schölkopf, "Evaluating vaccine allocation strategies using simulation-assisted causal modeling," ***Patterns***, vol. 4, no. 6, p. 100739, Jun. 2023. [Online]. Available: https://doi.org/10.1016/j.patter.2023.100739

[15] K. Sherratt, H. Gruson, R. Grah, H. Johnson, R. Niehus, B. Prasse, F. Sandmann, J. Deuschel, D. Wolffram, S. Abbott, A. Ullrich, G. Gibson, E. L. Ray, N. G. Reich, D. Sheldon, Y. Wang, N. Wattanachit, L. Wang, J. Trnka, G. Obozinski, T. Sun, D. Thanou, L. Pottier, E. Krymova, J. H. Meinke, M. V. Barbarossa, N. Leithauser, J. Mohring, J. Schneider, J. Wlazlo, J. Fuhrmann, B. Lange, I. Rodiah, P. Baccam, H. Gurung, S. Stage, B. Suchoski, J. Budzinski, R. Walraven, I. Villanueva, V. Tucek, M. Smid, M. Zajicek, C. P. Alvarez, B. Reina, N. I. Bosse, S. R. Meakin, L. Castro, G. Fairchild, I. Michaud, D. Osthus, P. A. D. Loro, A. Maruotti, V. Eclerova, A. Kraus, D. Kraus, L. Pribylova, B. Dimitris, M. L. Li, S. Saksham, J. Dehning, S. Mohr, V. **Priesemann**, G. Redlarski, B. Bejar, G. Ardenghi, N. Parolini, G. Ziarelli, W. Bock, S. Heyder, T. Hotz, D. E. Singh, M. Guzman-Merino, J. L. Aznarte, D. Morina, S. Alonso, E. Alvarez, D. Lopez, C. Prats, J. P. Burgard, A. Rodloff, T. Zimmermann, A. Kuhlmann, J. Zibert, F. Pennoni, F. Divino, M. Catala, G. Lovison, P. Giudici, B. Tarantino, F. Bartolucci, G. J. Lasinio, M. Mingione, A. Farcomeni, A. Srivastava, P. Montero-Manso, A. Adiga, B. Hurt, B. Lewis, M. Marathe, P. Porebski, S. Venkatramanan, R. P. Bartczuk, F. Dreger, A. Gambin, K. Gogolewski, M. Gruziel-Slomka, B. Krupa, A. Moszyński, K. Niedzielewski, J. Nowosielski, M. Radwan, F. Rakowski, M. Semeniuk, E. Szczurek, J. Zielinski, J. Kisielewski, B. Pabjan, K. Holger, Y. Kheifetz, M. Scholz, B. Przemyslaw, M. Bodych, M. Filinski, R. Idzikowski, T. Krueger, T. Ozanski, J. Bracher, and S. Funk, "Predictive performance of multi-model ensemble forecasts of COVID-19 across european nations," *eLife*, vol. 12, Apr. 2023. [Online]. Available: https://doi.org/10.7554/elife.81916

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[17] B. Cramer, M. Kreft, S. Billaudelle, V. Karasenko, A. Leibfried, E. Müller, P. Spilger, J. Weis, J. Schemmel, M. A. Muñoz, V. **Priesemann**, and J. Zierenberg, "Autocorrelations from emergent bistability in homeostatic spiking neural networks on neuromorphic

hardware," ***Phys. Rev. Res.***, vol. 5, p. 033035, Jul 2023. [Online]. Available: https://link.aps.org/doi/10.1103/PhysRevResearch.5.033035

[18] F. A. Mikulasch, L. Rudelt, and V. **Priesemann**, "Visuomotor Mismatch Responses as a Hallmark of Explaining Away in Causal Inference," ***Neural Computation***, vol. 35, no. 1, pp. 27–37, Jan. 2023. [Online]. Available: https://doi.org/10.1162/neco_a_01546

[19] P. Wollstadt, D. L. Rathbun, W. M. Usrey, A. M. Bastos, M. Lindner, **Priesemann, Viola**, and M. Wibral, "Information-theoretic analyses of neural data to minimize the effect of researchersâ assumptions in predictive coding studies," *PLOS Computational Biology*, vol. 19, no. 11, p. e1011567, Nov. 2023. [Online]. Available: https://dx.plos.org/10.1371/journal.pcbi.1011567

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[21] F. A. Mikulasch, L. Rudelt, M. Wibral, and V. **Priesemann**, "Where is the error? hierarchical predictive coding through dendritic error computation," ***Trends in Neurosciences***, 2022.

[22] D. P. Shorten, V. **Priesemann**, M. Wibral, and J. T. Lizier, "Early lock-in of structured and specialised information flows during neural development," ***Elife***, vol. 11, p. e74651, 2022.

[23] P. Dönges, J. Wagner, S. Contreras, E. N. Iftekhar, S. Bauer, S. B. Mohr, J. Dehning, A. Calero Valdez, M. Kretzschmar, M. Mäs, and V. **Priesemann**, "Interplay between risk perception, behaviour, and covid-19 spread," ***Frontiers in Physics***, p. 68, 2022.

[24] T. Czypionka, E. N. Iftekhar, B. Prainsack, V. **Priesemann**, S. Bauer, A. C. Valdez, S. Cuschieri, E. Glaab, E. Grill, J. Krutzinna *et al.*, "The benefits, costs and feasibility of a low incidence covid-19 strategy," ***The Lancet Regional Health-Europe***, vol. 13, p. 100294, 2022.

[25] M. Oliu-Barton, B. S. Pradelski, Y. Algan, M. G. Baker, A. Binagwaho, G. J. Dore, A. El-Mohandes, A. Fontanet, A. Peichl, V. **Priesemann** *et al.*, "Elimination versus mitigation of sars-cov-2 in the presence of effective vaccines," ***The Lancet Global Health***, vol. 10, no. 1, pp. e142–e147, 2022.

[26] K. Y. Oróstica, S. Contreras, A. Sanchez-Daza, J. Fernandez, V. **Priesemann**, and Á. Olivera-Nappa, "New year, new sars-cov-2 variant: Resolutions on genomic surveillance protocols to face omicron," ***The Lancet Regional Health–Americas***, vol. 7, 2022.

[27] S. Contreras, J. Dehning, and V. **Priesemann**, "Describing a landscape we are yet discovering," ***AStA Advances in Statistical Analysis***, pp. 1–4, 2022.

[28] K. Leite, P. Garg, F. P. Spitzner, S. G. Darvas, M. Bähr, V. **Priesemann**, and S. Kügler, "α-synuclein impacts on intrinsic neuronal network activity through reduced levels of cyclic amp and diminished numbers of active presynaptic terminals," ***Frontiers in molecular neuroscience***, vol. 15, 2022.

[29] S. Contreras, Á. Olivera-Nappa, and V. **Priesemann**, "Rethinking covid-19 vaccine allocation: it is time to care about our neighbours," ***The Lancet Regional Health–Europe***, vol. 12, 2022.

[30] F. A. Mikulasch, L. Rudelt, and V. **Priesemann**, "Visuomotor mismatch responses as a hallmark of explaining away in causal inference," *Neural computation*, vol. 35, no. 1, pp. 27–37, 2022.

[31] J. P. Neto, F. P. Spitzner, and V. **Priesemann**, "Sampling effects and measurement overlap can bias the inference of neuronal avalanches," *PLOS Computational Biology*, vol. 18, no. 11, p. e1010678, 2022.

[32] K. Sherratt, H. Gruson, R. Grah, H. Johnson, R. Niehus, B. Prasse, F. Sandman, J. Deuschel, D. Wolffram, S. Abbott *et al.*, "Predictive performance of multi-model ensemble forecasts of covid-19 across european nations," *medRxiv*, pp. 2022–06, 2022.

[33] F. A. Mikulasch, L. Rudelt, and V. **Priesemann**, "Local dendritic balance enables learning of efficient representations in networks of spiking neurons," ***Proceedings of the National Academy of Sciences***, vol. 118, no. 50, p. e2001925118, 2021.

[34] S. Contreras, J. Dehning, S. B. Mohr, S. Bauer, F. P. Spitzner, and V. **Priesemann**, "Low case numbers enable long-term stable pandemic control without lockdowns," ***Science Advances***, vol. 7, no. 41, p. eabg2243, 2021.

[35] S. Bauer, S. Contreras, J. Dehning, M. Linden, E. Iftekhar, S. B. Mohr, A. Olivera-Nappa, and V. **Priesemann**, "Relaxing restrictions at the pace of vaccination increases freedom and guards against further covid-19 waves," ***PLoS Computational Biology***, vol. 17, no. 9, p. e1009288, 2021.

[36] L. Rudelt, D. G. Marx, M. Wibral, and V. **Priesemann**, "Embedding optimization reveals long-lasting history dependence in neural spiking activity," ***PLOS Computational Biology***, vol. 17, no. 6, p. e1008927, 2021.

[37] S. Contreras and V. **Priesemann**, "Risking further covid-19 waves despite vaccination," ***The Lancet Infectious Diseases***, vol. 21, no. 6, pp. 745–746, 2021.

[38] V. **Priesemann**, R. Balling, S. Bauer, P. Beutels, A. C. Valdez, S. Cuschieri, T. Czypionka, U. Dumpis, E. Glaab, E. Grill *et al.*, "Towards a european strategy to address the covid-19 pandemic," ***The Lancet***, vol. 398, no. 10303, pp. 838–839, 2021.

[39] E. N. Iftekhar, V. **Priesemann**, R. Balling, S. Bauer, P. Beutels, A. C. Valdez, S. Cuschieri, T. Czypionka, U. Dumpis, E. Glaab *et al.*, "A look into the future of the covid-19 pandemic in europe: an expert consultation," ***The Lancet Regional Health-Europe***, p. 100185, 2021.

[40] S. Jähne, F. Mikulasch, H. G. Heuer, S. Truckenbrodt, P. Agüi-Gonzalez, K. Grewe, A. Vogts, S. O. Rizzoli, and V. **Priesemann**, "Presynaptic activity and protein turnover are correlated at the single-synapse level," ***Cell Reports***, vol. 34, no. 11, p. 108841, 2021.

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[42] V. **Priesemann**, R. Balling, M. M. Brinkmann, S. Ciesek, T. Czypionka, I. Eckerle, G. Giordano, C. Hanson, Z. Hel, P. Hotulainen *et al.*, "An action plan for pan-european defence against new sars-cov-2 variants," ***The Lancet***, vol. 397, no. 10273, pp. 469–470, 2021.

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[46] A. Hagemann, J. Wilting, B. Samimizad, F. Mormann, and V. **Priesemann**, "Assessing criticality in pre-seizure single-neuron activity of human epileptic cortex," ***PLoS Computational Biology***, vol. 17, no. 3, p. e1008773, 2021.

[47] V. **Priesemann**, M. M. Brinkmann, S. Ciesek, S. Cuschieri, T. Czypionka, G. Giordano, C. Hanson, N. Hens, E. Iftekhar, P. Klimek *et al.*, "Call for a pan-european covid-19 response must be comprehensive–authors' reply," ***The Lancet***, vol. 397, no. 10284, p. 1541, 2021.

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[55] J. Zierenberg, J. Wilting, V. **Priesemann**, and A. Levina, "Description of spreading dynamics by microscopic network models and macroscopic branching processes can differ due to coalescence," ***Physical Review E***, vol. 101, no. 2, p. 022301, 2020.

[56] M. Linden, J. Dehning, S. B. Mohr, J. Mohring, M. Meyer-Hermann, I. Pigeot, A. Schöbel, and V. **Priesemann**, "Case numbers beyond contact tracing capacity are endangering the containment of covid-19," ***Deutsches Arzteblatt International***, vol. 117, no. 46, pp. 790–791, 2020.

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