NAME	POSITION TITLE
Prevedel, Robert	Group Leader

INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
Diploma Thesis, University of Vienna, Austria	Magister	1	Quantum Physics
PhD Thesis, University of Vienna, Austria	PhD	3	Quantum Optics
Institute for Quantum Computing, University of Waterloo, Canada	Post doc	2	Quantum Imaging
Institute of Molecular Pathology & Max F. Perutz Laboratories, Vienna, Austria	Post doc	5	Biological Imaging

POSITIONS

2016 – present	Group Leader, EMBL Heidelberg, Germany (open-ended contract since 2022)
2019 – present	Group Leader, Molecular Medicine Partnership Unit, Heidelberg, Germany
2021 – present	Investigator, Interdisciplinary Center for Neurosciences, Heidelberg, Germany
2021 – present	Investigator, German Center for Lung Research (DZL), Germany
2011 – 2016	Senior Post-Doctoral Fellow (Marie Curie), Research Institute of Molecular Pathology (IMP) and Max F. Perutz Laboratories GmbH (MFPL), Vienna, Austria. Mentor: Dr. Alipasha Vaziri
2013 – 2016	External Lecturer, FH IMC Krems, Krems, Austria.
2009 – 2011	Post-Doctoral Fellow (Schrödinger), Institute for Quantum Computing, University of Waterloo, Canada. Mentor: Prof. Kevin Resch
2006 – 2009	Research and Teaching Assistant, Faculty of Physics, University of Vienna, Austria. Mentor: Prof. Dr. Anton Zeilinger (Nobel Laureate Physics 2022)
2005	Joint Study Fellow, Department of Physics, University of Queensland, Brisbane, Australia. Mentor: Prof. Andrew White
2004 – 2005	Scientific Assistant, Institute for Experimental Physics, University of Vienna, Austria. Mentor: Prof. Dr. Anton Zeilinger (Nobel Laureate Physics 2022)

GRANTS

2023	Stimulator grant – Correlative brain imaging across scales, LifeScience Alliance, 100k€
2022	Horizon Infra-Tech grant – IMAGINE (Co-PI, WP-lead), EU Commission, 750k€.
2021	DFG grant – Revealing the neural population code of auditory space, 200k€.
2021	CZI Deep Tissue Imaging grant – Smart combination of light & sound, 330k$.
2021	MOLIT Collaboration grant - 4D imaging methods for tumor organoids, ~250k€.
2021	COST Innovator Grant – Brillouin database of biological materials, 100k€ total.
2020	DZL3.0 – German Lung Cancer Consortium, Brillouin endoscopy, BMBF, ~400k€.
2020	FET Proactive - Multi-photon infrared brain imaging, EU Commission, 470k€.
2019	ERC Consolidator grant - Brillouin microscopy, EU Commission, 2.000k€.
2019	DFG SPP grant - Development of new voltage imaging tools, 250k€.
2019	Attract Seed Grant - Ultra-fast volumetric microscopy (Co-PI), EU Commission, 100k€.

FELLOWSHIPS

2012	Marie Curie IIF Post-Doctoral Fellowship, European Union, 180kEUR.
2011	VIPS Post-Doctoral Fellowship, Max F. Perutz Laboratories, 280kEUR.
2009	Erwin-Schrödinger Post-Doctoral Fellowship, Austrian Science Fund, 60kEUR.
2009	MRI Post-Doctoral Fellowship, Ontario Ministry for Research & Innovation, 50kCAD.
2005	Joint Study Fellowship, University of Vienna.

TEACHING EXPERIENCE

From 2016	Light microscopy lectures & course practicals at EMBL, Heidelberg.
From 2019	Neurobiology lectures & course practicals at EMBL, Heidelberg.
2013 – 2016	Lecturer for laboratory course Analytical Chemistry, FH IMC Krems.
2013	Co-Lecturer Physical Chemistry 2, University of Vienna.
2013	Tutor for laboratory course Biophysik Praktikum, University of Vienna
2009 – 2011	Tutor for laboratory course Experimental Quantum Information, University of Waterloo.
2006 – 2009	Substitute Lecturer & Tutor for undergraduate physics courses & labs, University of Vienna.

AWARDS

2019	ERC Consolidator grant
2014	FENS-IBRO Travel Award, from the FENS.
2010	PhD thesis selected as one of 4 best in 2008/09 by AMO section of DPG.
2006, 2007	Merit Scholarship, from the University of Vienna.
2006	KWA Scholarship, from the University of Vienna (Conference Grant).
2006	International Communication Scholarship, from the ÖFG (Travel Grant).
2004	Top-Stipendium Exchange Scholarship, from the State of Lower Austria.
2003	Top-Stipendium Scholarship, from the State of Lower Austria.

CONFERENCE AND SEMINAR ORGANIZATION

2024	Nomination Committee Biophotonics – 2024 International Congress of Basic Science
2024 -	Program Committee Member SPIE Photonics Europe – Neurophotonics track
2024	Organizer EMBO Workshop: Imaging Mouse Development, EMBL, Heidelberg;
2022	Organizer FENS 2022 workshop on “Multiscale deep and large-volume brain imaging”
2020 -	Co-Lead Organizer of the EMBL-Janelia Bioimaging seminars (virtual); ~50 participants;
Dec. 2020	Organizer of the COST Action BioBrillouin workshop on Instrumentation Vienna, Austria; 15 participants;
July 2019/22/23	Organizer of the EMBL Undergraduate School: Visualizing Life EMBL, Heidelberg, Germany; 30 participants;
January 2018	Organizer of the 1st EMBL Practical Course: Brillouin Microscopy EMBL, Heidelberg, Germany; 30 participants;
July 2013	Co-organizer of the Quantum Effects in Biological Systems Conference 2013 Institute of Molecular Pathology, Vienna, Austria; 54 participants;

PUBLICATIONS

Number of publications: **57**. Number of citations: **5784**. H-index: **30**; ORCID ID: 0000-0003-3366-4703.

- **21 senior-author** (6 Nature Methods, 1 Adv. Opt. Mat., 1 Biophys. Rev., 5 Optica group)
- **12 first-author** (1 Nature, 4 Nature Methods, 1 Nature Physics, 3 Physical Review Letters)

Original research publications († denotes corresponding author; *equal contribution)

1. F. Yang†, C. Bevilacqua, S. Hambura, A. Neves, A. Gopalan, K. Watanabe, M. Govendir, M. Bernabeu, J. Ellenberg, A. Diz-Muñoz, S. Köhler, G. Rapti, M. Jechlinger, and R. Prevedel†.
   Pulsed stimulated Brillouin microscopy enables high-sensitivity mechanical imaging of live and fragile biological specimens.
   Nature Methods doi:10.1038/s41592-023-02054-z; **bioRxiv**: 2022.11.10.515835 (2022).

2. C. Bevilacqua, J.M. Gomez, U.-M. Fiuza, C.J. Chan, L. Wang, S. Hambura, M. Eguren, J. Ellenberg, A. Diz-Muñoz, M. Leptin and R. Prevedel†.
   High-resolution line-scan Brillouin microscopy for live-imaging of mechanical properties during embryo development.
   Nature Methods 20, 755–760 (2023). **bioRxiv**: 2022.04.25.489364 (2022). doi:10.1038/s41592-

023-01822-1; News & Views: https://doi.org/10.1038/s41592-023-01843-w
Selected as one of the 10 biggest science stories of 2022 by The Guardian.
https://tinyurl.com/375dspvwa

3. R. Singh, K. Subramanian, R.M. Power, A. Paix, A. Gil, A. Ikmi, and R. Prevedel†.
Oblique plane microscope for mesoscopic imaging of freely moving organisms with cellular resolution.
Optics Express 31, 2292-2301 (2023). **bioRxiv**: 2022.07.15.500249 (2022).

4. C. Couteau†, S. Barz, T. Durt, T. Gerrits, J. Huwer, R. Prevedel, J. Rarity, A. Shields, and G. Weihs. *Applications of single photons in quantum metrology, biology and the foundations of quantum physics. Applications of single photons to quantum communication and computing.*
Nature Reviews Physics 5, 354–363 (2023); doi.org/10.1038/s42254-023-00589-w.

5. C. Couteau†, S. Barz, T. Durt, T. Gerrits, J. Huwer, R. Prevedel, J. Rarity, A. Shields, and G. Weihs. *Applications of single photons to quantum communication and computing.*
Nature Reviews Physics 5, 326–338 (2023); doi.org/10.1038/s42254-023-00583-2.

6. J. Czuchnowski† and R. Prevedel†.
Transfer function asymmetry in Fabry-Pérot pressure sensors.
Optics Letters 47, 6089-6092 (2022). **ArXiv**: 2109.02443 (2021).

7. A. Paix, S. Basu, P. Steenbergen, R. Singh, R. Prevedel and A. Ikmi†.
Endogenous tagging of multiple cellular components in the sea anemone Nematostella vectensis.
PNAS 120, e2215958120 (2022).

8. J. Czuchnowski† and R. Prevedel†.
Zernike mode rescaling extends capabilities of adaptive optics for microscopy.
Optics Continuum 12, 2600-2606 (2022). **ArXiv**: 2110.14233 (2021).

9. Stokkermans, A. Chakrabarti, K. Subramanian, L. Wang, S. Yin, P. Moghe, P. Steenbergen, G. Mönke, T. Hiiragi, R. Prevedel, L. Mahadevan† and A. Ikmi†.
Muscular hydraulics drive larva-polyp morphogenesis
Current Biology 32, 1-12 (2022). bioRxiv: 2021.08.19.456976 (2021).

10. J. Czuchnowski and R. Prevedel†.
Comparing free-space and fibre-coupled detectors for Fabry-Pérot based all-optical photoacoustic tomography.
Journal of Biomedical Optics 27, 046001 (2022). ArXiv: 2112.03081 (2021).

11. L. Streich, J. Boffi, L. Wang, K. Alhalaseh, M. Barbieri, R. Rehm, S. Deivasigamani, C. Gross, A. Agarwal, and R. Prevedel†.
High-resolution structural and functional deep brain imaging using adaptive optics three-photon microscopy
Nature Methods 18, 1253-1258 (2021). bioRxiv:2021.01.12.426323 Selected for Technology Feature by Nature: https://www.nature.com/articles/d41586-023-00336-2

12. C.C. Chan†, C. Bevilacqua, and R. Prevedel†.
Mechanical mapping of mammalian follicle development using Brillouin microscopy.
Communications Biology 4, 1133 (2021). bioRxiv:2021.02.21.432113

13. J. Czuchnowski† and R. Prevedel†.
Cross-compensation of Zernike aberrations in Gaussian beam optics.
Optics Letters 46, 3480-3483 (2021). ArXiv:2102.05383

14. N. Wagner*, F. Beuttenmueller*, N. Norlin, J. Gierten, J. Wittbrodt, M. Weigert, L. Hufnagel, R. Prevedel*,†, and A. Kreshuk*,†.
Deep learning-enhanced light-field imaging with continuous validation.
Nature Methods 18, 557–563 (2021). bioRxiv:228924; *Equal contribution
News & Views: https://www.nature.com/articles/s41592-021-01151-1

15. J. Czuchnowski and R. Prevedel†.
Adaptive optics enhanced sensitivity in Fabry-Pérot based photoacoustic tomography
Photoacoustics 23, 100276 (2021); bioRxiv:2021.01.13.426260v1.

16. M.S. Ozturk, M.G. Montero, L. Wang, L. Chaible, M. Jechlinger† and R. Prevedel†.
In-vivo monitoring and quantification of breast cancer growth dynamics with non-invasive intravital

mesoscopic fluorescence molecular tomography
Communications Biology 4, 556 (2021). bioRxiv:234898;

17. C. Morelli*, L. Castaldi*, S.J. Brown, L.L. Streich, A. Websdale, F.J. Taberner, B. Cerreti, A. Barenghi, K.M. Blum, J. Sawitzke, T. Frank, L. Steffens, B. Doleschall, J. Serrao, S.G. Lechner, R. Prevedel, and P.A. Heppenstall†.
Identification of a population of peripheral sensory neuron that regulates blood pressure
Cell Reports 35, 109191 (2021)*;* bioRxiv:909960;

18. D. Li, H. Zhang, L. L. Streich, P. Lu, L. Wang, D. Zhu, R. Prevedel† and J. Qian†, *AIE-nanoparticle assisted ultra-deep microscopy in the in vivo mouse brain under 1300-nm excitation*, **Materials Chemistry Frontiers 5,** 3201-3208 (2021). bioRxiv:2020.12.25.424420

19. J. Czuchnowski and R. Prevedel†.
Improving the sensitivity of planar Fabry-Pérot cavities via adaptive optics and mode filtering
Advanced Optical Materials 2001337 (2020); ArXiv:2007.09769

20. S. Gross-Thebing*, L. Truszkowski*, D. Tenbrinck, H. Sánchez-Iranzo, C., Camelo, K.J. Westerich, A. Singh, P. Maier, J. Prengel, P. Lange, J. Hüwel, F. Gaede, R. Sasse, B. Vos, T. Betz, M. Matis, R. Prevedel, S. Luschnig, A. Diz-Muñoz, M. Burger†, E. Raz†
Using migrating cells as probes to illuminate features in live embryonic tissues.
Science Advances 6, eabc5546 (2020);

21. G. Antonacci, T. Beck, A. Bilenca, J. Czarske, K. Elsayad†, J. Guck, K. Kim, B. Krug, F. Palombo, R. Prevedel†, and G. Scarcelli.
Recent progress and current opinions in Brillouin Microscopy for life science application
Biophys. Rev. 12, 615–624 (2020). *Note: Authors were arranged alphabetically.*

22. H. Sánchez-Iranzo*, C. Bevilacqua*, A. Diz-Muñoz† and R. Prevedel†.
A 3D Brillouin microscopy dataset of the in-vivo zebrafish eye
Data in Brief 30, 105427 (2020). *Joint first authors

23. F. Geisler, R. Coch, C. Richardson, M. Goldberg, C. Bevilacqua, R. Prevedel and R. Leube†.
Intestinal intermediate filament polypeptides in C. elegans: Common and isotype-specific contributions to intestinal ultrastructure and function
Scientific Reports 10, 3142 (2020).

24. R. Prevedel†, A. Diz-Muñoz†, G. Ruocco and G. Antonacci.
Brillouin microscopy - an emerging tool for mechanobiology
Nature Methods 16, 969–977 (2019). ArXiv:1901.02006

25. N. Wagner*, N. Norlin*, J. Gierten, G. de Medeiros, B. Balázs, J. Wittbrodt, L. Hufnagel† and R. Prevedel†.
Instantaneous isotropic volumetric imaging of fast biological processes
Nature Methods 16, 497–500 (2019). bioRxiv:459370.

26. C. Bevilacqua*, H. Sánchez-Iranzo*, D. Richter, A. Diz-Muñoz and R. Prevedel†.
Imaging mechanical properties of sub-micron ECM in live zebrafish using Brillouin microscopy
Biomed. Opt. Exp. 10, 1420-1431 (2019). bioRxiv:491803. *Joint first authors

27. J. Qi, C. Sun, D. Li, H. Zhang, W. Yu, A. Zebibula, J. W. Y. Lam, W. Xi, L. Zhu, F. Cai, P. Wei, C. Zhu, R. T. K. Kwok, L. L. Streich, R. Prevedel, J. Qian, and B. Z. Tang.
Aggregation-Induced Emission Luminogen with Near-Infrared-II Excitation and Near-Infrared-I Emission for Ultradeep Intravital Two-Photon Microscopy.
ACS Nano 8, 7936–7945 (2018).

28. R. Prevedel, A.J. Verhoef, A.J. Pernia-Andrade, S. Weisenburger, B.S. Huang, T. Nöbauer, A. Fernandez, J.E. Delcour, P. Golshani, A. Baltuska and A. Vaziri.
Fast volumetric calcium imaging across multiple cortical layers using sculpted light.
Nature Methods 13, 1021–1028 (2016).

29. J. N. Tinsley*, M. I. Molodtsov*, R. Prevedel, D. Wartmann, J. Espigulé- Pons, M. Lauwers, and A. Vaziri.
Direct Detection of a Single Photon by Humans.
Nature Communications 7, 12172 (2016).

30. P. Rupprecht, R. Prevedel, F. Grössl, W.E. Haubensak, and A. Vaziri.
Optimizing and extending light-sculpting microscopy for fast functional imaging in neuroscience.
Biomedical Optics Express 6, 353-368 (2015); ArXiv:1501.03082

31. R. Prevedel*, Y.-G. Yoon*, M. Hoffmann, N. Pak, G. Wetzstein, S. Kato, T. Schrödel, R. Raskar, M. Zimmer, E.S. Boyden, and A. Vaziri.
Simultaneous whole-animal 3D-imaging of neuronal activity using light field microscopy.
Nature Methods 11, 727–730 (2014); ArXiv:1401.5333; selected for Cover

32. T. Scheidl, F. Tiefenbacher, R. Prevedel, F. Steinlechner, R. Ursin and A. Zeilinger.
Crossed crystal scheme for femto-second pulsed entangled photon generation in periodically poled potassium titanyl phosphate.
Phys. Rev. A 89 042324 (2014) ArXiv:1404.6914

33. C. Erven, E. Meyer-Scott, K. Fisher, J. Lavoie, B. L. Higgins, Z. Yan, C. J. Pugh, J.-P. Bourgoin, R. Prevedel, L. K. Shalm, L. Richards, N. Gigov, R. Laflamme, G. Weihs, T. Jennewein, and K.J. Resch.
Experimental Three-Particle Quantum Nonlocality under Strict Locality Conditions.
Nature Photonics 8, 292 (2014) ArXiv:1309.1379

34. K. Fisher, A. Broadband, L. K. Shalm, Z. Yan, J. Lavoie, R. Prevedel, T. Jennewein, and K.J. Resch.
Quantum computing on encrypted data.
Nature Communications 5, 3074 (2014) ArXiv:1309.2586

35. T. Schrödel*, R. Prevedel*, K. Aumayr, M. Zimmer and A. Vaziri.
Brain- wide 3D imaging of neuronal activity in Caenorhabditis elegans with sculpted light.
Nature Methods 10, 1013 (2013) ArXiv:1406.1603 *Equal contribution

36. M. Mazurek*, K. Schreiter*, R. Prevedel, R. Kaltenbaek and K.J. Resch.
Dispersion-cancelled biological imaging with quantum-inspired interferometry.
Scientific Rep. 3, 1582 (2013)

37. K. Fisher, R. Prevedel, R. Kaltenbaek and K.J. Resch.
Optimal linear optical implementation of a single-qubit damping channel.
New J. of Physics 14, 033016 (2012) ArXiv:1109.2070

38. R. Prevedel, K.M. Schreiter, J. Lavoie and K. J. Resch.
A classical analogue for dispersion cancellation of entangled photons with local detection.
Phys. Rev. A 84, 051803(R) (2011) ArXiv:1105.3956

39. N.K. Langford, S. Ramelow, R. Prevedel, W.J. Munro, G.J. Milburn and A. Zeilinger.
Efficient quantum computing using coherent photon conversion.
Nature 478, 360-363 (2011) ArXiv:1106.1992

40. R. Prevedel, D. R. Hamel, R. Colbeck, K. Fisher and K. J. Resch.
Experimental investigation of the uncertainty principle in the presence of quantum memory.
Nature Physics 7, 757-761 (2011) ArXiv:1012.0332

41. R. Prevedel, Y. Lu, W. Matthews, R. Kaltenbaek and K. J. Resch.
Entanglement-Enhanced Classical Communication over a Noisy Classical Channel.
Phys. Rev. Lett. 106, 110505 (2011) ArXiv:1010.2566

42. T. Paterek, J. Kofler, R. Prevedel, P. Klimek, M. Aspelmeyer, A. Zeilinger and C. Brukner.
Mathematical undecidability and quantum randomness.
New J. Phys. 12, 013019 (2010) ArXiv:0811.4542

43. T. Scheidl, R. Ursin, A. Fedrizzi, S. Ramelow, X.-S. Ma, T. Herbst, R. Prevedel, L. Ratschbacher, J. Kofler, T. Jennewein and A. Zeilinger.
Feasibility of 300 km quantum key distribution with entangled states.
New J. Phys. 11, 085002 (2009) ArXiv:1007.4645

44. R. Prevedel, G. Cronenberg, M.S Tame, M. Paternostro, P. Walther, M.S. Kim and A. Zeilinger.
Experimental realization of Dicke states of up to six qubits for multiparty quantum networking.
Phys. Rev. Lett. 103, 020503 (2009) ArXiv:0903.2212

45. R. Kaltenbeak, R. Prevedel, M. Aspelmeyer and A. Zeilinger.
High-fidelity entanglement swapping with independent sources.
Phys. Rev. A 79, 040302(R) (2009) ArXiv:0809.3991

46. A. Fedrizzi, R. Ursin, T. Herbst, M. Nespoli, R. Prevedel, T. Scheidl, F. Tiefenbacher, T. Jennewein and A. Zeilinger.
High-fidelity transmission of entanglement over a high-loss free-space channel.
Nature Physics 5, 389-392 (2009) ArXiv:0902.2015

47. R. Prevedel, M.S Tame, A. Stefanov, M. Paternostro, M.S. Kim and A. Zeilinger.
Experimental demonstration of decoherence-free one-way information transfer.
Phys. Rev. Lett. 99, 250503 (2007) ArXiv:0708.0960

48. P. Boehi, R. Prevedel, T. Jennewein, A. Stefanov, F. Tiefenbacher and A. Zeilinger.
Implementation and characterization of active feed-forward for deterministic linear optics quantum computing.
Appl. Phys. B 89, 499-505 (2007)

49. R. Prevedel, A. Stefanov, P. Walther and A. Zeilinger.
Experimental realization of a quantum game on a one-way quantum computer.
New J. Phys. 9, 205 (2007) ArXiv:0708.1129

50. K.J. Resch, K.L. Pregnell, R. Prevedel, A. Gilchrist, G.J. Pryde, J.L. O'Brien and A.G. White.
Time-Reversal and Super-Resolving Phase Measurements.
Phys. Rev. Lett. 98, 223601 (2007) ArXiv:quant-ph/0511214

51. M.S. Tame, R. Prevedel, M. Paternostro, P. Boehi, M.S. Kim and A. Zeilinger.
Experimental Realization of Deutsch's Algorithm in a One-way Quantum Computer.
Phys. Rev. Lett. 98, 140501 (2007) ArXiv:quant-ph/0611186

52. R. Prevedel, C. Brukner, M. Aspelmeyer, T.D. Jennewein and A. Zeilinger.
Photonic entanglement as a resource in quantum computing and quantum communication
J. Opt. Soc. Am. B 24, 241-248 (2007) ArXiv:0803.4402

53. R. Prevedel, P. Walther, F. Tiefenbacher, P. Boehi, R. Kaltenbaek, T. Jennewein and A. Zeilinger.
High-speed linear optics quantum computing using active feed-forward.
Nature 445, 65-69 (2007) ArXiv:quant-ph/0701017

54. N.K. Langford, T.J. Weinhold, R. Prevedel, K.J. Resch, A. Gilchrist, J.L. O'Brien, G.J. Pryde and A.G. White.
Demonstration of a Simple Entangling Optical Gate and Its Use in Bell-State Analysis.
Phys. Rev. Lett. 95, 210504 (2005). ArXiv:quant-ph/0506262

Book Chapters (peer-reviewed)

55. C. Bevilaqua, K. Elsayad† and R. Prevedel†.
Brillouin microscopy: measuring cell and tissue biomechanics in 3D with high spatial resolution
Optical Elastography: optical techniques for assessing cell and tissue biomechanics; Larin, K. (Ed.) and Scarcelli, G. (Ed.), SPIE (2023), *in progress*

56. R. Prevedel†.
Large-scale fluorescence imaging in neuroscience
Imaging from cells to animals *in vivo* (Book chapter) New York: Barroso, M. (Ed.) and Intes, X. (Ed.), Chapman and Hall/CRC, (2020);

57. M. Ozturk and R. Prevedel†.
Fluorescence microscopy techniques
Imaging from cells to animals *in vivo* (Book chapter) New York: Barroso, M. (Ed.) and Intes, X. (Ed.), Chapman and Hall/CRC, (2020);

Electronic Preprints

58. F. Ruperti, I. Becher*, A. Stokkermans*, L. Wang*, N. Marschlich*, C. Potel, E. Maus, F. Stein, B. Drotleff, K. Schippers, M. Nickel, R. Prevedel†, J.M. Musser†, M. M. Savitski†, and D. Arendt†
Molecular profiling of sponge deflation reveals an ancient relaxant-inflammatory response.
bioRxiv: 2023.08.02.551666 (2023).

59. M. Schubert*, S. Soyka*, A. Tamimi*, E. Maus, R. Denninger, N. Wissmann, E. Reyhan, S. Tetzlaff, C. Beretta, M. Drumm, J. Schroers, A. Steffens, J. Walshon, K. McCortney, S. Heiland, A. Golebiewska, F. Kurz, W. Wick, F. Winkler, A. Kreshuk, T. Kuner, C. Horbinski, R. Prevedel†,*, V. Venkataramani†,*
Deep intravital brain tumor imaging enabled by tailored three-photon microscopy and analysis.
bioRxiv:2023.06.17.545350 (2023), doi:10.1101/2023.06.17.545350

60. J.C. Boffi†, B. Bathellier, H. Asari, and R. Prevedel†.
Effective sound localization coding by noisy populations of mouse inferior colliculus neurons revealed by fast volumetric imaging.
bioRxiv: 2022.08.19.504510 (2022).

61. Y. Ermakova, R. Waadt, M.S. Ozturk, M. Roshchin, A.A. Lanin, A. Chebotarev, M. Pochechuev, V. Pak, I. Kelmanson, D. Smolyarova, K. Keutler, A.M. Matyushenko, C. Tischer, P.M. Balaban, E.S. Nikitin, K. Schumacher, A.M. Zheltikov, R. Prevedel, C. Schultz† and V.V. Belousov†.
Thermogenetic control of Ca^{2+} levels in cells and tissues.
bioRxiv: 2023.03.22.533774 (2023).

62. J.C. Boffi, T. Wiessalla, and R. Prevedel†.
Primary motor cortex traces distinct trajectories of population dynamics during spontaneous facial motor sequences.
bioRxiv: 2021.02.15.431209 (2021).

63. S. Weisenburger*, R. Prevedel* and A. Vaziri.
Quantitative evaluation of two-photon calcium imaging modalities for high-speed volumetric calcium imaging in scattering brain tissue.
bioRxiv/2017/115659; **doi:** 10.1101/115659 *Equal contribution

Submitted manuscripts

64. F. Coraggio; M. Bhushan; S. Roumeliotis; C. Bevilacqua, R. Prevedel and G. Rapti†.
Lifelong interplay of HSP-proteostasis, ECM-cell junctions, and biomechanics ensures C. elegans astroglial architecture.

Miscellaneous publications (peer-reviewed)

65. G. Paci, E. Haas, L. Kornau, D. Marchetti, L. Wang, R. Prevedel, and A. Szmolenszky†.
Microscope in Action: an interdisciplinary fluorescence microscopy hands-on resource for schools.
The Biophysicist **2** (3) (2021); DOI: 10.35459/tbp.2020.000171

66. C. Bevilacqua, A. Diz-Muñoz† and R. Prevedel†.
Brillouin microscopy - measuring mechanics in biology using light.
Infocus Magazine - Royal Microscopical Society **53**, March issue (2019)

67. J. Czuchnowski and R. Prevedel†.
Photoacoustics: seeing with sound.
Science in School Magazine **47**, 14 (2019)

PATENTS

A. Vaziri, P. Rupprecht and R. Prevedel,
Recording dynamics of cellular processes.
U.S. Patent 10,317,390, filed September 8, 2014. Granted 2019.

A. Vaziri, E.S. Boyden, R. Prevedel, Y.-G. Yoon, N. Pak,
Three dimensional video imaging using light field microscopy.
U.S. Patent Application 62/105,595, filed January 20, 2015. Patent Pending.

INVITED PRESENTATIONS (SINCE 2017)

Karlsruhe Days of Optics & Photonics 2023, November 2023
MiFoBio lecture and workshop, Presqu'ile de Giens, November 2023
CZI Imaging Frontier Workshop, San Francisco, October 2023
MMPU Research Day, EMBL Heidelberg, September 2023
EMBO Practical Course: Plasticity in developing systems, EMBL Heidelberg, August 2023
Heidelberg Cancer Neuroscience Conference, University of Heidelberg, Germany, July 2023

Mechanobiology Institute Seminar (virtual), University of Singapore, Singapore, July 2023
Physics in Biology seminar, University of Geneva, Switzerland, June 2023
Computational Imaging Workshop, Wetzlar, Germany, May 2023
Online Lecture Series on Optics, Aalen University (virtual), April 2023
Neural Circuit Seminar, IIT Genoa, Italy, March 2023
ENS-CdG-EMBL Neurobiology Workshop, Rome, Italy, Feb. 2023
EMBL Corporate Partnership Program, Heidelberg, Feb. 2023
External seminar, IST Austria, Vienna, Nov. 2022
Modern Concepts in Structural Biology seminar, Vienna BioCenter, Nov. 2022
EMBL-Leica Scientific advisory board meeting, Nov. 2022
Biotechniques Spotlight Panel discussion (virtual), Oct. 2022
EMBL-IIT Imaging Meeting, Rome, Italy, Oct. 2022
SPP1926 Annual Meeting, Göttingen, Oct. 2022
MMPU Advisory Meeting, Heidelberg, Oct. 2022
EMBL Faculty Retreat, Paris, France, Sept. 2022
International School of Sound and Light, Oleron, France, Sept. 2022
Janelia Conference Imaging Mouse Development, Janelia, USA, Sept. 2022
Inflammation & Imaging Symposium Münster, Germany, Sept. 2022
MPI Science of Light seminar, Erlangen, Germany, Aug. 2022
FENS workshop organizer and speaker, Paris, France, July 2022
EMBL summer school keynote lecture, Heidelberg, July 2022
EMBL faculty seminar, Grenoble, France, May 2022
Translational Lung Research Center Retreat, Asselheim, Germany, May 2022
IZN Concept talk, Heidelberg University, April 2022
IIT-EMBL Rome workshop, Rome, Italy, April 2022
Euro-BioImaging Seminar Series, Heidelberg (virtual), Mar. 2022
Anatomy and Cell Biology seminar, Medical University Vienna (virtual), Mar. 2022
Cancer Neuroscience Seminar Series, Heidelberg (virtual), Mar. 2022
SPIE Photonics West – invited presentation, San Francisco, USA, Feb. 2022
EMBL-Abbvie Science Day presentation, Heidelberg, Jan, 2022
Erlangen W3 Medical Faculty interview, Erlangen, Nov. 2021
UK-China International Workshop, Plenary talk (virtual), Glasgow, UK, Nov. 2021
BioBrillouin training school (virtual), Vienna, Oct. 2021
EMBL-EMBO Symposium Seeing is Believing (virtual), Germany, Oct. 2021
Böhringer Annual Alumni meeting, Glashütten, Germany, Sept. 2021
OSA Imaging and Applied Optics Congress (virtual), Vancouver, July 2021
Chair EMBL-GSK Science Day (virtual), Heidelberg, July 2021
Mini-symposium Neurodegeneration Excellence Cluster proposal (virtual), Heidelberg, June 2021
University of Zurich Brain Research Institute Seminar (virtual), Switzerland, June 2021
Janelia workshop Biological tools for 4D Cellular Physiology (virtual), May 2021
CBB SAC Review (virtual), Heidelberg, May 2021
MMPU Research Day (virtual), Heidelberg, Apr. 2021
CZI Deep Tissue grant kickoff meeting (virtual), San Francisco, USA, Feb. 2021
EMBL Corporate Partnership Program (virtual), Heidelberg, Feb. 2021
Spanish & Portuguese Advanced Optical Microscopy Meeting (virtual), Valencia, Spain, Nov. 2020
Texas A&M Biophotonics seminar (virtual), USA, Oct. 2020
Imaging ONE WORLD lecture series (virtual), Cambridge, UK, Sept. 2020
DB GL retreat, Heidelberg, July 2020
MMPU Perspective Day, (virtual), Heidelberg, June 2020
Janelia Optical Imaging seminar (virtual), USA, May 2020
ELLS Teacher workshop, Heidelberg, March 2020
Chan Zuckerberg Biohub, San Francisco, USA, Feb. 2020
UC Davis, USA Feb. 2020
SPIE Photonics West – Neurotechnologies Plenary talk, San Francisco, USA, Feb. 2020
SPIE Photonics West – invited presentation, San Francisco, USA, Feb. 2020
BioBrillouin Instrumentation workshop, Vienna, Austria, Dec. 2019
Bern Microscopy Seminar, Switzerland, Nov. 2019
MMPU application interview, Heidelberg, Nov. 2019
EMBL PhD course: Neuroscience, Heidelberg, Nov. 2019
BIMSB Microscopy seminar, Berlin, Nov. 2019
Swiss Microscopy Symposium, Engelberg, Switzerland, Oct. 2019
BioBrillouin conference 2019, Porto, Portugal, Sept. 2019
ERC Interview 2019, Brussels, Belgium, Sept. 2019
EMBO CBB course, Heidelberg, Sept. 2019
Microscopy workshop, Tromso, Norway, Sept. 2019
Lindau Laureate students visit, Heidelberg, July 2019
CBB GL retreat, Germany, July 2019

ECBO 2019, Munich, June 2019
BioBrillouin training school, Lyon, France, Jan. 2019
Imaging Seminar, Institut Fresnel, Paris, France, Jan. 2019
Optics within life sciences meeting, Perth, Australia, Nov. 2018
Guest Lecture, FH Mannheim, Germany, Nov. 2018
Rome GL retreat, Italy, Oct. 2018
ERC interview 2018, Brussels, Belgium, Sept. 2018
EMBL Australia symposium, Heidelberg, Sept. 2018
BioBrillouin conference, Perugia, Italy, Sept. 2018
EMBL Conference Imaging Mouse Development, Heidelberg, July 2018
ESOF Toulouse, France, July 2018
Poland joins EMBO symposium, Warsaw, Poland, June 2018
DB GL retreat, June 2018
Microscopy seminar, German Lung Cancer Center, Heidelberg, May 2018
Lunch seminar, BioMedX, Heidelberg, April 2018
Open Day lecture, IGH high school, Heidelberg, March 2018
Bruker visit to EMBL, Heidelberg, Jan. 2018
Medical Engineering Seminar, Morgridge Insitute, Madison, USA, Nov. 2017
EMBL conference Mammalian Genetics and Genomics, Heidelberg, Oct. 2017
Open Day lecture, OICE Erlangen, Germany, Oct. 2017
Olympus Microscopy Summit, Klostereberbach, Germany, Oct. 2017
EMBL conference 'Seeing is Believing', Heidelberg, Oct. 2017
CBB GL retreat, Heidelberg, July 2017
ECBO, Munich, June 2017

REVIEWER FOR JOURNALS

Nature
Cell
Nature Methods
Nature Biotechnology
Nature Nanotechnology
Nature Neuroscience
Nature Communication
Nature Reviews Methods Primer
Science Advances
Nature Light: Science and Applications
Nature Protocols
Reviews of Modern Physics
Physical Review Letters
Physical Review X
Optica
eLife
eLight
Small
Advanced Optical Materials
Developmental Cell
Development
Biomaterial Advances
Communications Biology
Photoacoustics
Photonics Research
Laser & Photonics Reviews
Optics Express
Optics Communication
Biomedical Optics Express
Current Opinion in Biomedical Engineering
Journal of Neuroscience Methods
Journal of the European Optical Society
Physical Review A
Physical Review Applied
Scientific Reports
New Journal of Physics

Quantum
European Journal of Physics
IEEE Photonics
IEEE Transactions Biomedical Engineering
ISciNote

REVIEWER FOR GRANTS

ERC Consolidator Grant (EU)
ERC Starting Grant (EU)
NIH-RFA-NS (Brain Initiative)
NSF Major Research Instrumentation
DFG (Germany)
FWF (Austria)
Cancer Research UK (UK)
ANR (France)
Inserm (France)
SNSF (Switzerland)
EPFL (Switzerland)
Wellcome Trust (UK)
Israel Science Foundation (ISF)
URochester Pilot grants (USA)
VIP-2 postdoctoral fellowships (Austria)
Fondecyt (Chile)

SCIENTIFIC NETWORKS

Since 2017	Management Committee Member of the COST Action Network “BioBrillouin” (CA16124) and Work Group Leader (WG3: Instrumentation) - collaborative network in the field of Brillouin spectroscopy applied to life sciences and health related problems.
Since 2018	Management Committee Member of the COST Action Network “COMULIS” (CA17121) – Correlated Multimodal Imaging in Life Sciences
Since 2022	Treasurer, International BioBrillouin Society
2023	Guest Editor for Focus Issue in J. Phys. Photonics on Brillouin Scattering in Biology

INSTITUTIONAL RESPONSIBILITIES

Since 2016	Member of 7 internal committees at EMBL (incl. Animal Welfare IACUC).
Since 2016	Member of 15 Thesis Advisory Committees and 5 PhD defense committees.
Since 2018	Member of 4 Faculty and 6 Service position recruitment panels at EMBL.
Since 2018	Career mentor for 3 EMBL postdocs (within EIPOD 4 program)

PROFESSIONAL MEMBERSHIPS

Optical Society of America
SPIE (Society of Photo-Optical Instrumentation Engineers)
International BioBrillouin Society