Hannes Bernien, Ph.D.

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CURRENT POSITION

Feb. 2019- **Assistant Professor,** Pritzker School of Molecular Engineering, University of Chicago

Nov. 2020- **Joint appointment,** Argonne National Laboratory

PREVIOUS RESEARCH POSITIONS

2015-19 **Postdoctoral Fellow in Physics,** PI Prof. Mikhail Lukin, Harvard University

2014-15 **Postdoctoral Fellow in Physics,** PI Prof. Ronald Hanson, QuTech, Delft, The Netherlands

EDUCATION

2014 **Ph.D. in Physics**, PI Prof. Ronald Hanson, Technical University Delft, The Netherlands

2009 **Seoul National University**, South Korea

2009 **Diplom (German Masters equivalent) in Physics**, University of Hannover, Germany

2006-7 **Peking University,** China

AWARDS & SCHOLARSHIPS

Awards

Klung Wilhelmy Science Award (2023), prestigious science award for German physicist under 40
NSF Career award (2023)
New Horizons in Physics Prize, Breakthrough Prize Foundation (2023)
Don York Faculty Initiative Award for outreach activities to local high schools (2023)
Web of Science Highly Cited Researcher (2021, 2022, 2023)
Sloan Research Fellowship (2021)
IOP international Quantum Technology Young Scientist Award (2020)
Kavli Publication Prize, Delft (2016)
Kavli PhD Thesis Prize, Delft (2015)
The Paul Ehrenfest Best Paper award (2015)
FOM Film challenge 2012, winning film about my research (>85,000 views on YouTube) (2013)
1st place: Young Speakers contest of the Dutch Physical Society NNV (2013)
Elsevier Diamond and Carbon Materials Young Scholar Prize (2012)
Best PhD Candidate Award, Universiteitsfonds Delft (2012)
Poster Prize, Casimir Springschool (2010)

Fellowships & Scholarships

JILA Visiting Fellow, May 2023
Rubicon postdoctoral fellowship, Dutch research organization, NWO (2015-17)
DAAD-KOSEF scholarship: "Korean Summer Institute Program" (2009)

PUBLICATIONS

- 35 articles in peer-reviewed journals, h-index = 29, > 14000 total citations (Google Scholar).
- Publications by journal: 6xNature, 5xScience, 3xNature Physics, 1xNature Photonics (invited review), 1xPNAS, 5xPRL, 1xNano Letters, 1xPRB, 1xOptics Express, 2xNJP, 1xOptics Letters, 1xQST, 1xPRX, 1xPRX Quantum, 1xPRR, 1xnpj Quant. Info, 1xnpj Comp. Materials, 1xISCA
- Co-filed four patents.

1. F. Gu, S. G. Menon, D. Maier, A. Das, T. Chakraborty, W. Tittel, **H. Bernien**, J. Borregaard. Hybrid Quantum Repeaters with Ensemble-based Quantum Memories and Single-spin Photon Transducers. arXiv:2401.12395 (2024)
2. S. Anand*, C. E. Bradley*, R. White, V. Ramesh, K. Singh, **H. Bernien**. A dual-species Rydberg array. arXiv:2401.10325 (2024) *contributed equally
3. A. Bilgin, I. N. Hammock, J. Estes, Y. Jin, **H. Bernien**, A. A. High, G. Galli. Donor-Acceptor Pairs in Wide-Bandgap Semiconductors for Quantum Technology Applications. *npj Computational Materials* **10**, 7 (2024)
4. S. G. Menon*, N. Glachman*, M. Pompili, A. Dibos, H. Bernien. An integrated atom array – nanophotonic chip platform with background-free imaging. arXiv:2311.02153 (2023) *contributed equally
5. R. J. Valencia-Tortora, N. Pancotti, M. Fleischhauer, **H. Bernien**, J. Marino. A Rydberg platform for non-ergodic chiral quantum dynamics. arXiv:2309.12392 (2023)
6. N. Nottingham, M. A. Perlin, R. White, **H. Bernien,** F. T. Chong, J. M. Baker. Decomposing and Routing Quantum Circuits Under Constraints for Neutral Atom Architectures. arXiv:2307.14996 (2023)
7. **H. Bernien.** A picture of a swinging atom. *Nature Physics* **19**, 474 (2023)
8. J. Covey, H. Weinfurter, **H. Bernien**. Quantum networks with neutral atom processing nodes. *npj Quantum Information* **9**, 90 (2023)
9. K. Singh*, C. E. Bradley*, S. Anand*, V. Ramesh, R. White, **H. Bernien**. Mid-circuit correction of correlated phase errors using an array of spectator qubits. *Science* **380**, 1265 (2023) (*contributed equally)
10. **H. Bernien**. A Picture of a swinging atom. *Nature Physics* **19**, 474 (2023)
11. K. Singh, S. Anand, A. Pocklington, J.T. Kemp, **H. Bernien**. A dual-element, two-dimensional atom array with continuous-mode operation. *Physical Review X* **12**, 011040 (2022)
    This work was featured in *Physics*.
12. W. Huie, S. G. Menon, **H. Bernien**, J. Covey. Multiplexed telecom-band quantum networking with atom arrays in optical cavities. Physical Review Research 3, 043154 (2021)
13. J.M. Baker, A. Litteken, C. Duckering, H. Hoffman, **H. Bernien**, F.T. Chong. Exploiting Long-Distance Interactions and Tolerating Atom Loss in Neutral Atom Quantum Architectures. ACM/IEEE 48th Annual International Symposium on Computer Architecture (ISCA) 818-831 (2021)
14. D. Awschalom, K. K. Berggren, **H. Bernien** et al. Development of Quantum Interconnects (QuICs) for Next-Generation Information Technologies. PRX Quantum 2, 017002 (2021)
15. C. D. Aiello, D. D. Awschalom, **H. Bernien** et al. Achieving a quantum smart workforce. Quantum Science and Technology 6, 030501 (2021)
16. T. Dordevic, P. Samutpraphoot, P. Ocola, **H. Bernien**, B. Grinkemeyer, I. Dimitrova, V. Vuletic, and M.D. Lukin. Nanophotonic quantum interface and transportable entanglement for atom arrays. Science

373, 1511 (2021)

17. S.G. Menon, K. Singh, J. Borreegaard, and **H. Bernien**. Nanophotonic quantum network node with neutral atoms and an integrated telecom interface. *New Journal of Physics* **22**, 073033 (2020)

18. P. Samutpraphoot, T. Dordevic, P. Ocola, **H. Bernien**, C. Senko, V. Vuletic, and M.D. Lukin. Strong Coupling of Two Individually Controlled Atoms via a Nanophotonic Cavity. *Physical Review Letters* **124**, 063602 (2020)

19. G. Torlai*, B. Timar*, E.P.L. van Nieuwenburg, H. Levine, A. Omran, A. Keesling, **H. Bernien**, M. Greiner, V. Vuletić, M.D. Lukin, R.G. Melko, M. Endres. Integrating neural networks with a quantum simulator for state reconstruction. *Physical Review Letters* **123**, 230504 (2019) (*contributed equally)

20. H. Levine, A. Keesling, G. Semeghini, A. Omran, T.T. Wang, S. Ebadi, **H. Bernien**, M. Greiner, V. Vuletić, H. Pichler, M. D. Lukin. Parallel Implementation of High-Fidelity Multiqubit Gates with Neutral Atoms. *Physical Review Letters* **123**, 170503 (2019).

21. A. Omran*, H. Levine*, A. Keesling, G. Semeghini, T.T. Wang, S. Ebadi, **H. Bernien**, A.S. Zibrov, H. Pichler, S. Choi, J. Cui, M. Rossignolo, P. Rembold, S. Montangero, T. Calarco, M. Endres, M. Greiner, V. Vuletić, and M.D. Lukin. Generation and manipulation of Schrödinger cat states in Rydberg atom arrays. *Science* 365, 570-574 (2019) (*contributed equally)

22. D. Kim, A. Keesling, A. Omran, H. Levine, **H. Bernien**, M. Greiner, M.D. Lukin, D.R. Englund. Large-scale uniform optical focus array generation with a phase spatial light modulator. *Optics Letters* **44**, 3178-3181 (2019)

23. A. Keesling, A. Omran, H. Levine, **H. Bernien**, H. Pichler, S. Choi, R. Samajdar, S. Schwartz, P. Silvi, S. Sachdev, P. Zoller, M. Endres, M. Greiner, V. Vuletić, M.D. Lukin. Quantum Kibble–Zurek mechanism and critical dynamics on a programmable Rydberg simulator. *Nature* **568**, 207–211 (2019)

24. H. Levine, A. Keesling, A. Omran, **H. Bernien**, S. Schwartz, A.S. Zibrov, M. Endres, M. Greiner, V. Vuletic, M.D. Lukin. High-Fidelity Control and Entanglement of Rydberg-Atom Qubits. *Physical Review Letters* **121**, 123603 (2018)

25. **H. Bernien**, S. Schwartz, A. Keesling, H. Levine, A. Omran, H. Pichler, S. Choi, A.S. Zibrov, M. Endres, M. Greiner, V. Vuletic, M.D. Lukin. Probing many-body dynamics on a 51-atom quantum simulator. *Nature* **551**, 579-584 (2017)

26. M. Endres*, **H. Bernien***, A. Keesling*, H. Levine*, E.R. Anschuetz, A. Krajenbrink, C. Senko, V. Vuletic, M. Greiner, M.D. Lukin. Atom-by-atom assembly of defect-free one-dimensional cold atom arrays. *Science* **354**, 1024-1027 (2016) (*contributed equally)

27. B. Hensen, **H. Bernien**, A.E. Dréau, A. Reiserer, N. Kalb, M.S. Blok, J. Ruitenberg, R.F.L. Vermeulen, R.N. Schouten, C. Abellán, W. Amaya, V. Pruneri, M. W. Mitchell, M. Markham, D.J. Twitchen, D. Elkouss, S. Wehner, T.H. Taminiau, R. Hanson. Loophole-free Bell inequality violation using electron spins separated by 1.3 kilometres. *Nature* **526**, 682-686 (2015)

28. W. B. Gao, A. Imamoglu, **H. Bernien**, R. Hanson. Coherent manipulation, measurement and entanglement of individual solid-state spins using optical fields. *Nature Photonics* **9**, 363–373 (2015)

29. W. Pfaff, B. Hensen, **H. Bernien**, S. van Dam, M.S. Blok, T.H. Taminiau, M.J. Tiggelman, M. Markham, R.N. Schouten, D.J. Twitchen, R. Hanson. Unconditional quantum teleportation between distant solid-state qubits. *Science* **345**, 532-535 (2014)

30. **H. Bernien**, B. Hensen, W. Pfaff, G. Koolstra, M.S. Blok, L. Robledo, T.H. Taminiau, M. Markham, D.J. Twitchen, L. Childress, R. Hanson. Heralded entanglement between solid-state qubits separated by three meters. *Nature* **497**, 86-90 (2013)

31. R.E. George, L. Robledo, O.J.E. Maroney, M.S. Blok, **H. Bernien**, M. Markham, D.J. Twitchen, J.J.L. Morton, G.A.D. Briggs, R. Hanson. Opening up three quantum boxes causes classically

undetectable wavefunction collapse. *Proceedings of the National Academy of Sciences* **110**, 3777-3781 (2013)

32. W. Pfaff, T.H. Taminiau, L. Robledo, **H. Bernien**, M.L. Markham, D. J. Twitchen, R. Hanson. Demonstration of entanglement-by-measurement of solid state qubits. *Nature Physics* **9**, 29-33 (2013)
33. T. van der Sar, Z.H. Wang, M.S. Blok, **H. Bernien**, T.H. Taminiau, D.M. Toyli, D.A. Lidar, D.D. Awschalom, R. Hanson, V.V. Dobrovitski. Decoherence-protected quantum gates for a hybrid solid-state spin register. *Nature* **484**, 82-86 (2012)
34. **H. Bernien**, L. Childress, L. Robledo, M. Markham, D.J. Twitchen, R. Hanson. Two-photon quantum interference from separate nitrogen vacancy centers in diamond. *Physical Review Letters* **108**, 043604 (2012)
35. L. Robledo*, L. Childress*, **H. Bernien***, B. Hensen, P.F.A. Alkemade, R. Hanson. High-fidelity projective read-out of a solid-state spin quantum register. Nature **477**, 547-578 (2011) (*contributed equally)
36. L. Robledo, **H. Bernien**, T. van der Sar, R. Hanson. Spin dynamics in the optical cycle of single nitrogen-vacancy centres in diamond. *New Journal of Physics* **13**, 025013 (2011)
37. Y.G. Jeong, **H. Bernien**, J.S. Kyoung, H.R. Park, H.S. Kim, J.W. Choi, B.J. Kim, H.T. Kim, K.J. Ahn, D.S. Kim. Electrical switching of THz radiation on VO2 thin film fabricated with antennas. *Optics Express* **19**, 21211 (2011)
38. L. Robledo, **H. Bernien**, I. van Weperen, R. Hanson. Control and coherence of the optical transition of single defect centers in diamond. *Physical Review Letters* **105**, 177403 (2010)
39. M. Seo, J.S. Kyoung, H.R. Park, S. Koo, H.S. Kim, **H. Bernien**, B.J. Kim, J.H. Choe, Y.H. Ahn, H.T. Kim N. Park, Q.H. Park, K.J. Ahn, D.S. Kim. Active THz nanoantennas based on VO2 phase transition. *Nano Letters* **10**, 2064 (2010)
40. M. Roemer, **H. Bernien**, G. Mueller, D. Schuh, J. Huebner, M. Oestreich. Electron-spin relaxation in bulk GaAs for doping densities close to the metal-to-insulator transition. *Physical Review B* **81**, 075216 (2010)

Patents

1. Neutral atom quantum information processor, (2017, pending)
2. Device for achieving multi-photon interference from NV centers, US9335606B2 (2011)

ADVISING EXPERIENCE

University of Chicago:

- Kevin Singh: Postdoctoral Researcher, Winner of IC Postdoc Fellowship (2020), Maria Lastra Excellence in Mentoring Award (2021), best poster award at MLQ2021 conference, Quantum Creators Prize 2023
- Conor Bradley: Postdoctoral Researcher, Quantum Fellowship
- Nikhil Harle: Graduate Student, winner of NSF graduate student fellowship
- Nayana Tiwari: Graduate Student
- Ryan White: Graduate Student, winner of NSF graduate student fellowship
- Vikram Ramesh: Graduate Student
- Shankar Menon: Graduate Student
- Noah Glachman: Graduate Student, 2023 QuNeW poster award
- Yuzhou Chai: Graduate Student, joint with Tian Zhong
- Shraddha Anand: Graduate Student
- Dahlia Ghoshal: Graduate Student
- Junzhe Bao: Graduate Student
- Jose Mendez Mendez: Graduate Student, joint with David Awschalom

- Undergraduate Students: Hongyi Meng, Roberto Cohen (2020 Metcalf Grant), Cody Googin (2021-2022 Quad Undergraduate Research Scholar)

Alumni:

- Matteo Pompili: Postdoctoral Researcher 2022-2023 → Amazon
- Jordan Kemp: research intern, Winner of NSF graduate student fellowship (currently graduate student UChicago)
- Samantha Lapp: research intern (currently graduate student UChicago)
- Wenjun Zhang: Master Student (currently graduate student Tsinghua)
- Jeremy Estes: Research Assistant (currently graduate student UCSB)
- Undergraduate Students: Kin Fung Ngan (currently graduate student CU Boulder), Sam Li, Rohan Kumar, Sam Goidel, Andrew Pocklington (2019, 2020 Metcalf Grant, currently graduate student UChicago), Haley Nguyen (2021 Metcalf Grant, 2021 Quad Undergraduate Research Scholar, currently graduate student at Harvard)

Harvard University: Supervision of 5 Ph.D. students.

TU Delft: Supervision of 1 bachelor, 1 master, and 2 Ph.D. students.

PROFESSIONAL SERVICE

Referee

Review of Modern Physics, Science, Nature, Nature Physics, Nature Photonics, Nature Communication, PRL, PRA, Optics Express, JOSA, *Optica*

Conference and Workshop Organization

- Workshop on Topological Quantum Matter in Magnetic and Synthetic Platforms 2024, organization
- Aspen summer workshop on "Exotic phases, gauge theories and dynamics in constrained systems", 2023
- NSF workshop on Quantum Advantage and Next Steps 2022, organization
- Quantum Creators Prize Symposium, UChicago 2021, 2022, 2023
- Subcommittee organizer for CLEO 2020, 2021, 2022 conference, "Quantum and atomic devices and instrumentation"
- Focus Topic organizer March Meeting 2022
- Quantum Sensing Workshop of the Chicago Quantum Exchange (2019)
- Frontiers of interacting systems of Rydberg atoms I and II, 2-day international workshop at the ITAMP, Harvard University (2017, 2023).

Teaching and education at the University of Chicago

- Implementations of quantum information processors (2021, 2022, 2023)
- QuantumLab: undergraduate quantum experiment lab course (2020, 2021: development, 2022 launch, 2023)
- Quantum Certificate (2020, 2021, 2022, 2023)
- Lecturer at Quantum Quickstart Summer program (2022, 2023)
- Lecturer at PME's City Colleges of Chicago program (2021, 2022)
- Lecturer at the Model Classes for the Family Visiting Weekend (2019, 2020)
- Lecturer at the PME Mentor Training Lunch Series (2019-2023)
- QuSTEAM: Developing a modular lab course for undergraduate education in Quantum Science as part of an NSF initiative

Service at the University of Chicago

- Co-organizer and founder of South Side Science Festival (2022, 2023)
- PME faculty search committee (2022, 2023)
- PME Graduate Student Admission and Recruitment Committee (2020 - 2023)

- Faculty organizer for Quantum Information Science and Engineering seminar
- Co-organizer Quantum Seminar series

PRESENTATIONS

Since 2010: more than 90 oral presentations at international conferences and seminars (>80 invited).

Teaching at Summer Schools

QSim: Quantum Simulation Summer School, Telluride, USA (2023)
Emergent Phenomena in Non-Equilibrium Quantum Many-Body Systems, ICTP, Sao Paolo, Brazil (2023)
Quantum Information Processing and simulation with Rydberg atom arrays, Summer School, Quantum Fluids of Light, Varenna, Italy (2022)

Invited Conference and Workshop Talks

Building Quantum Processors and Quantum Networks Atom-By-Atom, Chicago Quantum Exchange Workshop, Chicago, USA (2023)
Building Quantum Processors and Quantum Networks Atom-By-Atom, International Laser Physics Workshop, remote (2023)
A dual-species Rydberg array, Moonshot conference on quantum computing, Tokyo, Japan (2023)
Mid-circuit readout and error mitigation on a dual-species atom array, March Meeting, Las Vegas, USA (2023)
A dual-species atom array, GiRyd, Tübingen Germany (2023)
Error mitigation and interactions in a dual-species atom array, PQE, Snowbird, USA (2023)
A Dual Species Atom Array Quantum Processor, Fio Ls conference, Rochester, USA (2022)
A dual-species atom array processor, Workshop on Workshop on Long-range interactions, Innsbruck, Austria (2022)
A dual element atom array processor, Workshop on Salable Quantum Control, CQE, Chicago (2022)
Building Quantum Networks Atom-by-Atom, Quantum 2.0 conference, Boston USA (2022)
A dual-element atom array processor, DAMOP conference, Orlando USA (2022)
A dual-element atom array, Heraeus Workshop on Frontiers in Quantum Gas Microscopy, Germany (2022)
A dual-species atom array for quantum information processing, Duke Quantum Center Workshop (2022)
A dual-species atom array. InQubator for Quantum Simulation, University of Washington, USA (2021)
Building quantum processors and networks atom-by-atom, Physics World 'quantum week' webinar (2021)
Atom-Nanophotonic Quantum Network Node, Quantum Networking Meeting, ANL, Chicago, USA (2020)
Rydberg atom arrays for, Quantum Simulation and Information Processing, Conference on Emerging Quantum Information Technologies, Hong Kong (2019)
Rydberg atom arrays - The dark horse of quantum science and technology, Spinoza Workshop, Delft (2019)
Quantum simulation and computing with atomic arrays, QIS Workshop, ANL, Chicago, USA (2019)
Quantum many-body dynamics on a Rydberg quantum simulator, Workshop on non-equilibrium physics Mazara, Italy (2019)
Exploring quantum many-body dynamics and quantum information processing with reconfigurable arrays of atoms, PQE Conference, Snowbird, USA (2019)
Scalable quantum technologies with arrays of trapped atoms, MCAW, Urbana Champaign, USA (2018)
Many-body dynamics on a 51-atom quantum simulator, APS March Meeting, Los Angeles, USA (2018)
Probing many-body dynamics on a 51-atom quantum simulator, BEC2017, Sant Feliu, Spain (2017)
Quantum Dynamics of Strongly Interacting Atom Arrays, QSE workshop, Hannover, Germany (2017)
Cold Matter Assembled Atom-by-Atom, SCFQIS workshop, Seoul, South Korea (2016)
Quantum networks based on diamond spins, SPIE Photonics West, San Francisco, USA (2015)
Quantum Networks with Spins in Diamond, Condensed Matter in Paris, France (2014)
From remote entanglement to distant quantum teleportation, Workshop, Konstanz, Germany (2014)

Quantum Networks with Spins in Diamond, QDiamond2013, HuangShan, China (2013)
Preparation, single-shot readout and long-distance coupling of solid-state quantum registers, APS March Meeting, Boston, USA (2012)

Invited Seminars and Colloquia

Building quantum processors and networks atom-by-atom, Purdue University, Lafayette, USA (2023)
Building Quantum Processors and Quantum Networks Atom-by-Atom, Institute for Molecular Science, Okazaki, Japan (2023)
Spin models with Rydberg atoms: An experimentalist's view, Aspen center for physics, USA (2023)
Mid-circuit error mitigation and interactions on a dual-species atom array, CU Boulder, JILA, USA (2023)
Mid-circuit readout and error mitigation on a dual-species atom array processor, MIT, USA (2023)
Quantum Legos: Atom-by-Atom Towards Quantum Processors and Quantum Networks, Free University Berlin, Germany (2023)
Building quantum processors and quantum networks atom-by-atom, University of Darmstadt, Germany (2023)
Building dual-species quantum processors and networks atom-by-atom, Virtual AMO seminar, Youtube (2022)
Building quantum processors and networks atom-by-atom, Physics Colloquium, Rochester University, USA (2022)
Mid-circuit correction of correlated phase errors on a dual-element atom array, University of Wisconsin Madison (2022)
Building quantum processors and quantum networks atom-by-atom, UPenn, USA (2022)
Building quantum processors and quantum networks atom-by-atom, University of Virginia, USA (2022)
Engineering quantum processors and quantum networks atom-by-atom. IBM Qiskit Seminar (2022)
Engineering quantum processors and quantum networks atom-by-atom. QuCoLiMa, Germany (2022)
Engineering quantum processors and quantum networks atom-by-atom. AMOS special seminar, Weizmann Institute of Science, Israel (2021)
Engineering quantum processors and quantum networks atom-by-atom. YQI Colloquium, Yale, USA (2021)
Engineering quantum processors and quantum networks atom-by-atom, Quantum British Columbia, Canada (2021)
Engineering quantum processors and quantum networks atom-by-atom, RWTH Aachen, Germany (2021)
New tools in the atom array toolbox: A dual species array and telecom wavelength operation, ITAMP, Harvard, USA (2021)
Building quantum processors and quantum networks atom-by-atom, IQUIST, UIUC, USA (2020)
Engineering large quantum systems atom-by-atom, Colloquium University of Chicago, USA (2020)
Rydberg atom arrays for Quantum Simulation and Information Processing, Colloquium Marquette University, Milwaukee, USA (2020)
Quantum LEGOs: Engineering large quantum systems atom-by-atom, Miami University, Ohio, USA (2019)
Quantum LEGOs: Engineering large quantum systems atom-by-atom, ANL, Chicago, USA (2019)
Exploring quantum many-body dynamics and quantum information processing with reconfigurable arrays of atoms, University of Wisconsin Madison, USA (2018)
Exploring quantum many-body dynamics and quantum information processing with reconfigurable arrays of atoms, University of Colorado Boulder, USA (2018)
Exploring many-body dynamics on a 51-atom quantum simulator, CUA, Harvard, USA (2017)
Exploring many-body dynamics on a 51-atom quantum simulator, ICFO, Barcelona, Spain (2017)
Quantum LEGOs: Building large quantum systems atom-by-atom, UNSW, Sydney, Australia (2017)
Quantum LEGOs: Building large quantum systems atom-by-atom, Tübingen, Germany (2017)
Exploring Many-Body Dynamics in Strongly Interacting Atom Arrays, Hannover, Germany (2017)
Quantum Science with Arrays of Atoms, TU Delft, The Netherlands (2017)
Quantum Many-Body Dynamics of Strongly Interacting Atom Arrays, IST, Austria (2017)
Quantum Many-Body Dynamics of Arrays of Atoms, HQOC, Harvard, USA (2017)

Loophole-free violation of Bell's inequality, IQI, Caltech, USA (2016)
Loophole-free violation of Bell's inequality, iQuISE, MIT, USA (2016)
Loophole-free violation of Bell's inequality, BBN, Cambridge, USA (2015)
Quantum Networks with Spins in Diamond, Pines Lab, Berkeley, USA (2015)
From quantum teleportation to a loophole-free Bell test, HCOQ, Harvard, USA (2015)
Entanglement between diamonds separated by 3 meters, McGill, Montreal, Canada (2013)
Heralded entanglement between two distant diamonds, Cambridge University, UK (2013)
Quantum Networks with Spins in Diamond, Seminar at HP-labs, Palo Alto, USA (2013)
Quantum Networks with Spins in Diamond, Stanford University, Palo Alto, USA (2013)
Heralded entanglement between qubits separated by 3 meters, UCL, London, UK (2012)
Interference of two distant NV centers, University of Hannover, Germany (2011)

Contributed Conference Talks
Defect-free atom arrays on demand, Damop, Providence, USA (2016)
Towards Atom Arrays on Demand, CUA workshop, MIT/Harvard, USA (2016)
From remote teleportation to a 'loophole-free' Bell test, QCMC, Hefei, China (2014)
Quantum Networks with Spins in Diamond, APS March Meeting, Denver, USA (2014)
Quantum Networks with Spins in Diamond, Workshop, Leeds, England (2014)
Heralded entanglement between qubits separated by 3 meters, QIPC, Florence, Italy (2013)
Heralded entanglement between solid-state qubits, DAMOP, Quebec City, Canada (2013)
Quantum Networks with Spins in Diamond, Kavli-MPQ workshop, Delft Netherlands (2013)
Heralded entanglement between two distant diamonds, MRS , San Fransisco, USA (2013)
Heralded entanglement between qubits separated by 3 meters, DPG, Hannover, Germany (2013)
Heralded entanglement between solid-state qubits, IOP conference, London, UK (2012)
Quantum Networks with Spins in Diamond, QCMC-conference, Vienna, Austria (2012)
Readout and long-distance coupling of quantum registers, FOM, Veldhoven, Netherlands (2012)
Projective read-out of a solid state quantum register, Lunteren, Netherlands (2011)
Initialization and Readout of a Multi-Spin Quantum Register, Wesss, Lecce, Italy (2011)
Single-shot readout of the electron spin, Diamant Kick-Off meeting, Ulm, Germany (2011)