

Mikhail D. Lukin
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email: lukin@physics.harvard.edu
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Research Interests:

Quantum science: quantum communication, metrology and computation; Dynamics of strongly correlated atomic, optical and condensed matter systems; Coherent optical, spin and electronic phenomena at nanoscale; Quantum optics in nanophotonic systems; Quantum techniques for metrology and nanoscale sensing in chemistry, biology and material science.

Education:

Texas A&M University	College Station, TX
<i>March 1998. Ph.D. in Physics.</i>	
Moscow Institute of Physics and Technology	Moscow, Russia
<i>June 1993. M.Sc. (summa cum laude) in applied physics and mathematics</i>	

Professional Experience:

2023 – Present	Joshua and Beth Friedman University Professor , Harvard University
2018 – Present	Co-Director , Harvard Quantum Initiative in Science and Engineering, Harvard University
2017 – 2023	George Vasmer Leverett Professor of Physics , Harvard University
2010 – 2023	Co-Director , Harvard-MIT Center for Ultracold Atoms, Harvard University
2010 – 2018	Chair of Scientific Board , Harvard Quantum Optics Center, Harvard University
2006 – 2010	Co-Director , Institute for Theoretical, Atomic, Molecular and Optical Physics, Harvard University
2004 – 2017	Professor of Physics , Harvard University
2001 – 2004	Assistant Professor of Physics , Harvard University
1998 – 2001	ITAMP Postdoctoral Fellow , Harvard-Smithsonian CfA

Honors:

Falling Walls Breakthrough of the Year in Physical Sciences (2023)
University Professorship, Harvard University (2023)
International Quantum Award, International Conference for Quantum Communication, Measurement and Computing (2022)
Norman F. Ramsey Prize of American Physical Society (2022)
Charles Hard Townes Award of the Optical Society of America (2021)
George Gamow Award (2020)
National Academy of Sciences Member (2018)
James O. Gordon Memorial Speaker, Optical Society of America (2018)
Sproull Lecturer, Cornell Center for Materials Research (2018)
Willis Lamb Award for Quantum Optics and Laser Science (2017)
Alexander M. Cruickshank Lecturer Award, Gordon Research Conference (2016)
National Security Science and Engineering Faculty Fellowship, US Department of Defense (2015)
Julius Springer Prize for Applied Physics (2015)
Distinguished Lecturer, Lewiner Institute for Theoretical Physics, Technion (2015).
Distinguished Former Student Award, Texas A&M University (2013)

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Fellow of the American Association for the Advancement of Science (2013)
Karl Friedrich Bonhoeffer Lectureship, Max Planck Institute (2013)
Fellow of the American Physical Society (2011)
Alexander-von-Humboldt Professorship (2009, declined)
I.I. Rabi Prize of American Physical Society (2009)
AAAS Newcomb Cleveland Prize (2006)
Alfred P. Sloan Fellowship (2003)
David and Lucile Packard Fellowship for Science and Engineering (2002)
NSF Career Award (2002)
Fellow of the Optical Society of America (2001)
Adolph Lomb Medal of the Optical Society of America (2000)
Distinguished Graduate Research Award, Texas A&M University (1998)
Phi Kappa Phi (1998)
R.A. Welch Research Fellowship, National Cancer Institute (1997)

Other Professional Activities and Services:

- Co-founder & Board Member, QuEra Computing, Inc. (2019-present).
- Co-founder & Board Member, Quantum Diamond Technologies, Inc. (2013-present).
- Member of Advisory Board for Center for Quantum Phenomena (NYU), Center for Engineered Quantum Systems (Univ. of Queensland, Australia, through 2018), Russian Quantum Center (Moscow, 2012-2022), Kavli Institute for Theoretical Physics, (Santa Barbara, 2008-2011).
- Member of multiple Advisory Panels, Study Groups and Committees on AMO Physics and Quantum Information Science & Technology for NSF, DOD, DOE, NAS, APS.
- Member of editorial board of “Quantum Information Processing” (2002-present).
- Regular referee for NSF, Nature, Science, Physical Review Letters, Nature Physics, Optics Letters, Physical Review, Applied Physics Letters.
- Scientific commentator for Nature and Science.
- Co-organizer of Gordon Research Conference series on “Quantum Science”; co-chair of the first conference (Easton, MA 2012).
- Organizer of the multiple scientific conferences including 8 ITAMP and CUA-sponsored workshops.

Graduate and Postdoctoral Advisors:

Graduate Advisor: Marlan O. Scully, Texas A&M University.

Postdoctoral Sponsor: Kate Kirby, American Physical Society.

Publications: more than 450, h-index 176 according to Google Scholar

For detailed information see <https://scholar.google.com/citations?user=ppJpl64AAAAJ>

Current research support:

NSF, DOD (ARO, AFOSR, DARPA), DOE, Gordon and Betty Moore Foundation, QuEra Computing, Inc., Amazon Web Services

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Thesis Advisor and Postgraduate-Scholar Sponsor

PhD Advisor: (Total: 52)

Trond Andersen, Google/MIT; Axel Andre, AIG; Michal Bajcsy, Univ. of Waterloo; Mihir Bhaskar, AWS; Darrick Chang, ICFO; Lilian Childress, McGill Univ.; Nicholas Chisholm, Stanford Business School; Joonhee Choi, Stanford; Soowon Choi, MIT; Yiwen Chu, ETH Zurich.; Iris Cong, Tamara Dordevic, Waymo; Bo Dwyer, Motional; Matthew Eisaman, Stony Brook Univ.; Ruffin Evans, Waymo; Michael Goldman, IonQ; Alexey Gorshkov, JQI; Michael Gullans, JQI.; Mohammad Hafezi, JQI; Liang Jiang, Univ. of Chicago; Aaron Kabcenell, Facebook; Alexander Keesling-Contreras, QuEra Computing; Emil Khabibouline (JQI), Shimon Kolkowitz, UC Berkeley; Peter Komar, AWS; Georg Kucsko, Kensho Technologies; Harry Levine, AWS; David Levonian, AWS; Igor Lovchinsky, Butterfly Networks; Bart Machielse, AWS; Peter Maurer, Univ. of Chicago; Jero Maze, Pontificia Univ. Catolica; Christian Nguyen, Google X; Paloma Ocola, Exponent; Janos Perczel, Polygence; Kristine Rezaei, Sutter Hill Ventures; Emma Rosenfeld, AWS; Arthur Safira, Motional; Polnop Samutpraphoot, UC Berkeley; Alp Sipahigil, UC Berkeley; Brendan Shields, Univ. of Basel; Andrey Sushko, Windbourne Systems; Jacob Taylor, JQI/NIST; Jeff Thompson, Princeton Univ.; Emre Togan, ETH Zurich; Elana Urbach, Harvard Univ.; Aditya Venkatramani, Harvard Univ.; Dominik Wild, MPQ; Norman Yao, Harvard Univ.; Hengyun Zhou, Harvard Univ and QuEra.; Leo Zhou, Caltech.

Current Graduate Students: (Total: 31)

Dolev Bluvstein, Pablo Bonilla, Madelyn Cain, Sambuddha Chattopadhyay, Neng-Chun (Allen) Chiu, Simon Evered, Frankie Fung, Haoyang Gao, Brandon Grinkemeyer, Timothy Guo, Yan Qi Huan, Marcin Kalinowski, Erik Knall, Can Knaut, Nazli Ugur Koyluoglu, Xuan Hoang Le, Nathan Leita, Xiaoling Liu, Trisha Madhavan, Nishad Maskara, Quynh Nguyen, Eric Peterson, John (DaLi) Schaefer, Danilo Shchepanovich, Pieter-Jan Constant Stas, Pavel Stroganov, Tamara Sumarac, Madison Sutula, Katherine Van Kirk, Yan-Cheng Wei, Andrew Yates.

Postdoctoral advisor: (Total: 68)

Alexey Akimov, Texas A&M; Ehud Altman, UC Berkeley; Nabeel Aslam, TU Braunschweig; Vlatko Balic, Tudor Investment; Rivka Bekenstein, Racah Inst. Of Physics; Steven Bennett, Date Plus Math; Hannes Bernien, Univ. of Chicago; Johannes Borregaard, TU Delft; Michael Burek, Illumina; Alexei Bylinskii, QuEra Computing, Inc.; Paola Capellaro, MIT; Emmanuel Dalla Torre, Bar-Ilan Univ.; Kristiaan de Greve, KU Leuven/IMEC; Nathalie de Leon, Princeton Univ.; Gurudev Dutt, Univ. of Pittsburgh; Manuel Endres, Caltech; Dirk

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Englund, MIT; Ofer Firstenberg, Weizmann Inst.; Xun Gao, JILA; Jan Gieseler, ICFO; Sarang Gopalakrishnan, Princeton; Wen Wei Ho, Stanford University; Jonathan Hodges, DUST Identity, Inc.; Sebastian Hofferberth, Univ. of Southern Denmark; Ania Jayich, UC Santa Barbara; Eric Kessler, AWS; Helena Knowles, Univ. of Cambridge; Frank Koppens, ICFO/ICREA; Renate Landig, Oculus; Christine Latta, start up; Chris Laumann, Boston Univ.; Jinguo Liu, Institute of Physics, CAS; Alexander Kubanek, Univ. of Ulm; Leigh Martin (Google), Khadijeh (Sona) Najafi, IBM; Travis Nicholson, National Univ. of Singapore; Ahmed Omran, Google; Johannes Otterbach, OpenAI; Dmitry Petrov, CNRS; Thibault Peyronel, Facebook; Hannes Pichler, Innsbruck University; Thomas Pohl, Aarhus Univ.; Mark Polking, MIT Lincoln Lab; Anatoly Polkovnikov, Boston Univ.; Peter Rabl, Tech. Univ. of Vienna; Ralf Reidinger, Univ. of Hamburg; Florentin Reiter, ETH Zurich; Ana Maria Rey, JILA; Joaquin Rodriguez-Nieva, TAMU.; Crystal Senko, Univ. of Waterloo; Alp Sipahigil, UC Berkeley; Sylvain Schwartz, ENS; Martin Schuetz, AWS; Efi Shahmoon, Weizmann Inst.; Anders Sorensen, Univ. of Copenhagen; Denis Sukachev, AWS; Alexander Sushkov, Boston Univ.; Jeff Thompson, Princeton Univ.; Tobias Tiecke, Facebook; Quirin Unterreithmeier, EPCOS AG; Oscar Viyuela, McKinsey & Co.; Caspar van der Wal, Univ. of Groningen; Daw-Wei Wang, Nat'l. Tsing-Hua Univ.; Philip Walther, Univ. of Vienna; Sheng-Tao Wang, QuEra Computing, Inc.; Javier Sanchez-Yamagishi, UC Irvine; Sina Zeytinoglu, NTT Research.

Current Postdoctoral Associates: (Total: 12)

Mohamed Abobeih, Ivana Dimitrova, Johannes Feldmeier*, Elmer Guardado-Sanchez, Simon Hollerith, Tom Manovitz, Kushal Seetharam, Giulia Semeghini, Aziza Suleymanzade, Aleksandr A. Zibrov*, Hengyun Zhou (*indicates co-supervised postdocs).

Current Other Professionals (Total: 2)

Tout Wang, Research Associate; Alexander S. Zibrov, Senior Scientist.