Polnop (Po) Samutpraphoot

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Education

2014–21 Harvard University, Ph.D. and A.M., Physics.
Thesis: *A quantum network node based on a nanophotonic interface for atoms in optical tweezers*. Advisor: Mikhail D. Lukin

2010–14 Massachusetts Institute of Technology, S.B., Physics.
Thesis: *Anomalous Hall effect and persistent valley currents in graphene pn junctions*. Advisor: Leonid Levitov

Employment

2022– Apple Inc., Cupertino, CA
Photonics Integrated Circuits Engineer, Platform Architecture (Senior, Oct 2025–)

2021–22 University of California, Berkeley
Postdoctoral Researcher with Alp Sipahigil in the Department of Electrical Engineering & Computer Sciences

Teaching Experience

2019 Harvard University, Department of Physics
Teaching Fellow in Modern Atomic and Optical Physics I (Physics 285a).

2014 Massachusetts Institute of Technology, Department of Physics
Teaching Assistant in Experimental Physics I (8.13, also known as Junior Lab).

Publications

1. L. Komza, **P. Samutpraphoot**, M. Odeh, Y-L. Tang, M. Mathew, J. Chang, H. Song, M-K. Kim, Y. Xiong, G. Hautier, A. Sipahigil. Indistinguishable photons from an artificial atom in silicon photonics, *Nature Communications* **15** (1), 6920 (2024); arXiv:2211.09305.

2. P. L. Ocola, I. Dimitrova, B. Grinkemeyer, E. Guardado-Sanchez, T. Dordevic, **P. Samutpraphoot**, V. Vuletić, M. D. Lukin. Control and entanglement of individual Rydberg atoms near a nanoscale device, *Physical Review Letters* **132**, 113601 (2024); arXiv:2210.12879.

3. D. I. Song, A. Yu, **P. Samutpraphoot**, J. Lee, M. Kim, B. J. Park, A. Sipahigil, M.-Ki Kim. Three-dimensional programming of nanolaser arrays through a single optical microfiber, *Optica* **9** (12), 1424-1432 (2022).

4. T. Dordevic†, **P. Samutpraphoot†**, P. L. Ocola†, H. Bernien, B. Grinkemeyer, I. Dimitrova, V. Vuletić, M. D. Lukin. Entanglement transport and a nanophotonic interface for atoms in optical tweezers, *Science* **373**, 1511 (2021); arXiv:2105.06485.
Science Perspective: "Photons and qubits get a better connection" by Adam Kaufman

5. **P. Samutpraphoot†**, T. Dordevic†, P. L. Ocola†, H. Bernien, C. Senko, V. Vuletić, M. D. Lukin. Strong coupling of two individually controlled atoms via a nanophotonic cavity, *Physical Review Letters* **124**, 063602 (2020); arXiv:1909.09108.

6. Y. D. Lensky, J. C. W. Song, **P. Samutpraphoot**, L. S. Levitov. Topological Valley Currents in Gapped Dirac Materials, *Physical Review Letters* **114** (25), 256601 (2015); arXiv:1412.1808.

7. J. C. W. Song, **P. Samutpraphoot**, L. S. Levitov. Topological Bands in G/h-BN Heterostructures, *Proceedings of the National Academy of Sciences* **112** (35), 10879–10883 (2015); arXiv:1404.4019.

8. **P. Samutpraphoot**, S. Weber, Q. Lin, D. Gangloff, A. Bylinskii, B. Braverman, A. Kawasaki, C. Raab, W. Kaenders, V. Vuletić. Passive intrinsic-linewidth narrowing of ultraviolet extended-cavity diode laser by weak optical feedback, *Optics Express* **22**, 11592-11599 (2014); arXiv:1402.6379.

†Equal contribution

Conference Presentations and Invited Talks

04/2022 Cryogenic Fiber Coupling for Silicon Quantum Photonics, The Berkeley Sensor & Actuator Center Conference, UC Berkeley (poster)

09/2021 Cryogenic Fiber Packaging for Silicon Quantum Photonics, The Berkeley Sensor & Actuator Center Conference, UC Berkeley (poster)

03/2021 A quantum network node based on a nanophotonic interface for atoms in optical tweezers, Harvard-MIT Center for Ultracold Atoms (virtual talk)

01/2021 A Nanoscale Interface between Atoms and Photons, Princeton University (virtual talk)

01/2021 A Nanoscale Interface between Atoms and Photons, UC Berkeley (virtual talk)

12/2020 A Nanoscale Interface between Atoms and Photons, Max-Planck Institute for Quantum Optics (virtual talk)

12/2020 A Nanoscale Interface between Atoms and Photons, Stanford University (virtual talk)

05/2019 A Nanoscale Interface between Atoms and Photons, APS DAMOP meeting (virtual poster)

07/2017 A Nanoscale Interface for Atoms and Photons, Princeton University, Princeton, NJ

01/2017 Nanophotonic Cavity QED with Cold Atoms, Thai-Singapore Scholars Workshop on Topics in Quantum Technology, Bangkok, Thailand

07/2016 Nanophotonic Cavity QED with Trapped Neutral Atoms, ICAP, Seoul, Korea (poster)

01/2016 Nanophotonic Cavity QED with Neutral Atoms, CQT, Singapore

06/2015 Atom Entanglement in Nanophotonic Cavity QED, APS DAMOP meeting, Columbus, OH (poster)

03/2014 Anomalous Topological Currents in Graphene Superlattices, APS March meeting, Denver, CO (poster)

06/2013 Narrowing external cavity diode laser with optical feedback, EECSCon, MIT, Cambridge, MA

Honors and Awards

2021	Bloch Postdoctoral Fellowship at Stanford University (offered)
2019	Bok Center Certificate for Distinction in Teaching, Harvard University
2014	Purcell Fellowship, Harvard University
2014	Phi Beta Kappa society, Massachusetts Institute of Technology
2014	Sigma Pi Sigma honor society, Massachusetts Institute of Technology
2014	Joint Quantum Institute Fellowship at the University of Maryland (offered)
2012	Edward C. Pickering Prize, Massachusetts Institute of Technology
2008	Gold medal, International Physics Olympiad