

Chen-Lung Hung—Curriculum Vitae

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Quantum Science and Engineering Institute	Email: clhung@purdue.edu
Purdue University	

RESEARCH INTERESTS

Experimental quantum gas and quantum many-body physics; atom-nanophotonics integration for quantum simulation and network

EDUCATION

Ph.D. Physics, The University of Chicago, USA, 2005–2011

B.S. Physics, National Taiwan University, Taiwan, 1999–2003

PROFESSIONAL EXPERIENCES

Professor, Department of Physics and Astronomy, Purdue University, USA, 2025 –Present
Associate Professor, Department of Physics and Astronomy, Purdue University, USA, 2021 –2025
Assistant Professor, Department of Physics and Astronomy, Purdue University, USA, 2015 –2021

Visiting scholar, Max-Planck-Institute of Quantum Optics, Garching Germany, Jun&Sep 2014, Mar 2015
IQIM Postdoctoral scholar, California Institute of Technology, USA, Dec 2011–Dec 2014
Postdoctoral Scholar, James Franck Institute, The University of Chicago, USA, Sep–Oct 2011

HONORS AND AWARDS

NSF CAREER Award, 2019
Seed for Success Acorn Award, Purdue University 2019
W. M. Keck Foundation Science and Engineering Research Grant, Dec 2018
AFOSR Young Investigator Award, 2017
Institute for Quantum Information and Matter Postdoctoral Fellowship, Caltech, 2012-2014
Finalist, APS Outstanding Doctoral Thesis Research in AMO Physics, 2012
The William Rainey Harper Dissertation Fellowship, The University of Chicago, 2009-2010
Dr. Yuan T. Lee Scholarship, CTCI Foundation, Taiwan 2002
National Taiwan University Presidential Award, Taiwan 2001
Ministry of Education Scholarship for Talented Undergraduate Students, Taiwan 1999

PUBLICATIONS

Total citations in [Google Scholar](#): >5814, h-index: 25

37. Observation of many-body coherence in quasi-one-dimensional attractive Bose gases
H. Tamura, S. Banerjee, Rongjie Li, S. I. Mistakidis, P. Kevrekidis and **C.-L. Hung**
[arXiv:2506.13597](#) (2025).
36. Collective emission and selective-radiance in atomic clouds and arrays coupled to a microring resonator
S. Deepak, X. Zhou, **C.-L. Hung** and F. Robicheaux
[arXiv:2503.21121](#) (2025).

35. Selective collective emission from a dense atomic ensemble coupled to a nanophotonic resonator
X. Zhou, S. Deepak, F. Robicheaux and **C.-L. Hung**
[arXiv:2503.05664](#) (2025); *Phys. Rev. Lett* (in press).
34. Collapse of a quantum vortex in an attractive two-dimensional Bose gas
S. Banerjee, K. Zhou, S. K. Tiwari, H. Tamura, R. Li, P. Kevrekidis, S. I. Mistakidis, V. Walther and **C.-L. Hung**
Phys. Rev. Lett **135**, 073401 (2025).
33. Trapped atoms and superradiance on an integrated nanophotonic microring circuit
X. Zhou, H. Tamura, T.-H. Chang and **C.-L. Hung**
Phys. Rev. X **14**, 031004 (2024).
32. Observation of self-patterned defect formation in atomic superfluids—from ring dark solitons to vortex dipole necklaces, H. Tamura, C.-A. Chen and **C.-L. Hung**
Phys. Rev. X **13**, 031029 (2023).
31. Nanophotonic cavity cooling of a single atom
C. Lv, M. Zhu, S. Banerjee and **C.-L. Hung**
Phys. Rev. A **108**, 023120 (2023).
30. Observation of self-oscillating supersonic flow across an acoustic horizon in two dimensions
H. Tamura, S. Khlebnikov, C.-A. Chen and **C.-L. Hung**
[arXiv:2304.10667](#) (2023); *Phys. Rev. A* (in press).
29. Coupling single atoms to a nanophotonic whispering-gallery-mode resonator via optical guiding
X. Zhou, H. Tamura, T.-H. Chang and **C.-L. Hung**
Phys. Rev. Lett. **130**, 103601 (2023).
28. Realization of efficient 3D tapered waveguide-to-fiber couplers on a nanophotonic circuit
T.-H. Chang, X. Zhou, H. Tamura and **C.-L. Hung**
Optics Express **30**, 31643-31652 (2022).
27. Observation of quasiparticle pair-production and quantum entanglement in atomic quantum gases quenched to an attractive interaction
C.-A. Chen, S. Khlebnikov and **C.-L. Hung**
Phys. Rev. Lett. **127**, 060404 (2021).
26. Observation of scale invariance in two-dimensional matter-wave Townes solitons
C.-A. Chen and **C.-L. Hung**
Phys. Rev. Lett. **127**, 023604 (2021).
25. Observation of universal quench dynamics and Townes soliton formation from modulational instability in two-dimensional Bose gases
C.-A. Chen and **C.-L. Hung**
Phys. Rev. Lett. **125**, 250401 (2020).
24. Resonator-assisted single-molecule quantum state detection
M. Zhu*, Y.-C. Wei* and **C.-L. Hung**
Phys. Rev. A **102**, 023716 (2020). Editor's suggestion.
23. Efficiently coupled microring circuit for on-chip cavity QED with trapped atoms
T.-H. Chang, Xinchao Zhou, Brian Fields and **C.-L. Hung**
Appl. Phys. Lett. **117**, 174001 (2020). Invited paper for a special topic *Hybrid Quantum Devices*.

22. Microring resonators on a suspended membrane circuit for atom–light interactions
T.-H. Chang, B. M. Fields, M. E. Kim and **C.-L. Hung**
[*Optica* 6, 1203-1210 \(2019\).](#)
21. Trapping single atoms on a nanophotonic circuit with configurable tweezer lattices, M. E. Kim*, T.-H. Chang*, B. M. Fields, C.-A. Chen and **C.-L. Hung**
[*Nature Communications* 10, 1647 \(2019\).](#)
20. Two-dimensional photonic crystals for engineering atom–light interactions
S.-P. Yu, J. A. Muniz, **C.-L. Hung** and H. J. Kimble
[*Proc Natl Acad Sci* 116, 12743-12751 \(2019\).](#)
19. Colloquium: Quantum matter built from nanoscopic lattices of atoms and photons, D. E. Chang, J. S. Douglas, A. González-Tudela, **C.-L. Hung** and H. J. Kimble
[*Rev. Mod. Phys.* 90, 031002 \(2018\).](#)
18. Ultracold molecule assembly with photonic crystals
J. Pérez-Ríos, M. E. Kim and **C.-L. Hung**
[*New J. Phys.* 19, 123035 \(2017\).](#)
17. Quantum Spin Dynamics with Pairwise-Tunable, Long-Range Interactions
C.-L. Hung*, A. González-Tudela*, I. Cirac, and H. J. Kimble
[*Proc Natl Acad Sci* 113, E4946 \(2016\).](#) *equal contribution.
16. Superradiance for atoms trapped along a photonic crystal waveguide
A. Goban*, **C.-L. Hung***, J. D. Hood*, S.-P. Yu*, J. A. Muniz, O. Painter and H. J. Kimble
[*Phys. Rev. Lett.* 115, 063601 \(2015\).](#) Selected for *Physics Synopsis*. *equal contribution.
15. Subwavelength vacuum lattices and photon-mediated atomic interactions in photonic crystals
A. González-Tudela, **C.-L. Hung**, D. E. Chang, H. J. Kimble and I. Cirac
[*Nature Photonics* 9, 320-325 \(2015\).](#)
14. Quantum many-body models with cold atoms coupled to photonic crystals
J. S. Douglas, H. Habibian, **C.-L. Hung**, A. V. Gorshkov, H. J. Kimble and D. E. Chang
[*Nature Photonics* 9, 326-331 \(2015\).](#)
13. Atom-light interactions in photonic crystals
A. Goban*, **C.-L. Hung***, S.-P. Yu*, J. D. Hood*, J. A. Muniz*, J. H. Lee, M. J. Martin, A. C. McClung, K. S. Choi, D. E. Chang, O. Painter and H. J. Kimble
[*Nature Communication* 5, 3808 \(2014\).](#) *equal contribution.
12. Nanowire photonic crystal waveguides for single-atom trapping and strong light-matter interactions, S.-P. Yu, J. D. Hood, J. A. Muniz, M. J. Martin, R. Norte, **C.-L. Hung**, S. M. Meenehan, J. D. Cohen, O. Painter and H. J. Kimble
[*Appl. Phys. Lett.* 104, 111103 \(2014\).](#)
11. Trapped atoms in one-dimensional photonic crystals
C.-L. Hung*, S. M. Meenehan*, D. E. Chang, O. Painter and H. J. Kimble
[*New J. Phys.* 15, 083026 \(2013\).](#)
10. Quench dynamics in Bose condensates in the presence of a bath: theory and experiment
A. Rancon, **C.-L. Hung**, C. Chin and K. Levin
[*Phys. Rev. A* 88, 031601\(Rapid Commun.\) \(2013\).](#)

9. From cosmology to cold atoms: observation of Sakharov oscillations in a quenched atomic superfluid, **C.-L. Hung**, V. Gurarie and C. Chin
Science **341**, 1213 (2013). Selected for a *Science Perspective*.
8. Strongly interacting two-dimensional Bose gases
L.-C. Ha, **C.-L. Hung**, X. Zhang, U. Eismann, S.-K. Tung and C. Chin
Phys. Rev. Lett. **110**, 145302 (2013).
7. Quantum critical behavior of ultracold atoms in two-dimensional optical lattices
X. Zhang, **C.-L. Hung**, S.-K. Tung and C. Chin
Science **335**, 1070 (2012).
6. Extracting density-density correlations from *in situ* images of atomic quantum gases
C.-L. Hung, X. Zhang, L.-C. Ha, S.-K. Tung, N. Gemelke and C. Chin
New J. Phys. **13**, 075019, Focus issue on *Quantum simulation* and an IOP select (2011).
5. Exploring quantum criticality based on ultracold atoms in optical lattices
X. Zhang, **C.-L. Hung**, S.-K. Tung, N. Gemelke and C. Chin
New J. Phys. **13**, 045011, Focus issue on *Strongly correlated quantum fluids: From ultracold quantum gases to QCD plasmas* (2011).
4. Observation of scale invariance and universality in two-dimensional Bose gases
C.-L. Hung, X. Zhang, N. Gemelke and C. Chin
Nature **470**, 239 (2011).
3. Slow mass transport and statistical evolution of an atomic gas across the superfluid-Mott insulator transition
C.-L. Hung, X. Zhang, N. Gemelke and C. Chin
Phys. Rev. Lett. **104**, 160403 (2010).
2. *In situ* observation of incompressible Mott-insulating domains in ultracold atomic gases
N. Gemelke, X. Zhang, **C.-L. Hung** and C. Chin
Nature **460**, 995 (2009).
1. Accelerating evaporative cooling of atoms into Bose-Einstein condensation in optical traps
C.-L. Hung, X. Zhang, N. Gemelke and C. Chin
Phys. Rev. A **78**, 011604 (Rapid Commun.) (2008).

NON-REFEREED JOURNAL ARTICLES AND CONFERENCE PROCEEDINGS

9. Realization of ensemble atom trapping and collective atom-photon coupling on a nanophotonic microring circuit, X. Zhou*, H. Tamura, T.-H. Chang and **C.-L. Hung**, *Quantum Sensing, Imaging, and Precision Metrology II* 12912, 42-45 (2024).
8. Experimental Phase Retrieval of Matter Waves, R. Ziv, H. Tamura, Y. Sagi, **C.-L. Hung** and M. Segev, Conference on Lasers and Electro-Optics (CLEO), 1-2 (2023).
7. Transporting and coupling single atoms to a nanophotonic whispering-gallery-mode resonator, X. Zhou, T.-H. Chang, H. Tamura and **C.-L. Hung**, *Quantum Sensing, Imaging, and Precision Metrology* 12447, 162-165 (2023).
6. Cold atom and nanophotonics hybrid platform, H. Tamura*, X. Zhou, T.-H. Chang and **C.-L. Hung**, *Optical and Quantum Sensing and Precision Metrology II*, PC120162W (2022).

5. Microring resonators on a suspended membrane circuit for atom-light interactions, H. Tamura, T.-H. Chang, X. Zhou, B. Fields, M. Zhu and **C.-L. Hung**, *Integrated Optics: Devices, Materials, and Technologies XXV* 11689, 116891D (2021).
4. Coupling single atoms and molecules to nanophotonic resonators, M. Zhu, T.-H. Chang, Y.-C. Wei, X. Zhou, B. Fields, H. Tamura and **C.-L. Hung**, *Optical and Quantum Sensing and Precision Metrology* 11700, 117003R (2021).
3. Ultracold molecules strongly coupled to a nanophotonic crystal: an universal platform for ultracold chemistry experiments, J. Perez-Rios*, M. E. Kim and **C.-L. Hung**, *Journal of Physics. Conference Series* 875 (9) (2017).
2. Feature issue introduction: material platforms and experimental approaches for quantum nanophotonics, **C.-L. Hung**, A. Mark Fox, Alexandra Boltasseva, and Robert W. Boyd, *Opt. Mater. Express* 7(2), 651-653 (2017).
1. Exploring universality of few-body physics based on ultracold atoms near Feshbach resonances, N. Gemelke, **C.-L. Hung**, X. Zhang, and C. Chin, *Pushing the frontiers of atomic physics, Proceedings of the XXI International Conference on Atomic Physics* p.240 (2008).

PATENTS

1. (pending) Non-provisional US patent app. 18/228,623, *3D Tapered Nanophotonic Waveguide to Fiber Edge Coupler*, T.-H. Chang and **C.-L. Hung** (2023).

BOOK CHAPTERS

1. In situ imaging of atomic quantum gases, **C.-L. Hung** and C. Chin, *Quantum gas experiments - exploring many-body states* edited by P. Törmä and K. Sengstock (Imperial College Press, London, 2014).

INVITED TALKS AND LECTURES

71. Invited talk at the INT workshop "Compressible Turbulence: From Cold Atoms to Neutron Star Mergers," University of Washington, June 2025.
70. Focused session talk at the 56th Annual APS DAMOP Meeting, June 2025.
69. "Selective collective emission with trapped atoms coupled to a nanophotonic resonator," AFOSR QIS/AMO Program review meeting, Arlington, VA, June 2025.
68. Physics Colloquium at Missouri University of Science and Technology, May 2025.
67. "Selective collective emission with trapped atoms coupled to a nanophotonic resonator," JFI seminar, University of Chicago, IL, May 2025.
66. "Dispersive hydrodynamics: theory and Applications" session, American Mathematical Society central sectional meeting, Lawrence, Kansas April 2025 (invitation passed to postdoc).
65. Wilhelm and Else Heraeus seminar on "Optical Nanofiber Applications (ONNA '25)", Physikzentrum Bad Honnef, Germany, March 2025.
64. SPIE Photonics West (Quantum West): "Quantum Sensing, Imaging, and Precision Metrology", San Francisco, CA Jan 2025 (invitation passed to student).

63. "Self-patterning in a dilute gas of ten thousand atoms", Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei Taiwan, Jan 2025
62. "Cold atom-nanophotonics integration: challenges and new opportunities", Optica Webinar organized by the Optica Integrated Photonics Technical Group, Optica.org, Nov. 2024.
61. Purdue University, Department of Physics and Astronomy colloquium, West Lafayette, IN , Oct 2024
60. "Exploring selective radiance with trapped atoms on a nanophotonic resonator", Illinois Quantum Information Science and Technology Center seminar, UIUC, Sep 2024.
59. "Exploring selective radiance with trapped atoms on a nanophotonic resonator", Michigan Quantum Research Institute, Ann Arbor, Sep 2024.
58. "A quantum gas simulator of an acoustic black hole in two dimensions", STRUCTURES workshop "(Quantum)-GR in the lab", Heidelberg University, Germany, June 2024.
57. "Frontier of atoms in optical tweezer arrays and cavity QED" workshop, Waseda University, Tokyo, Japan, March 2024.
56. "Collective atom-photon coupling to a nanophotonic circuit", in SPIE Photonics West: "Quantum Sensing, Imaging, and Precision Metrology II", San Francisco, CA Jan 2024.
55. "Probing dynamics in ultracold gases", invited tutorial at Midwest Cold Atom Workshop, University of Chicago, Nov. 2023.
54. "Quench dynamics of low-dimensional Bose gases in an optically painted box", AMO seminar, Stony Brook University, NY, Oct. 2023.
53. "Towards programmable quantum spin dynamics with trapped atoms coupled to a nanophotonic resonator", AFOSR QIS/AMO Program review meeting, Arlington, VA, Aug 2023.
52. "Integrated photonics with neutral atoms", Invited lecture at the International Summer School in Integrated Quantum Photonics at University of Bristol, UK, July 2023.
51. "Coupling single atoms to a nanophotonic whispering-gallery mode resonator" in WQED23 - 3rd workshop on Waveguide QED in Erice, Italy, May 2023
50. "Quench dynamics of tunable Bose gases in an optically painted box" in an invited session "Bose and Fermi gases in optical boxes", 54th Annual APS DAMOP Meeting, Spoken WA, May 2023
49. "Nanophotonic cavity QED with cold atoms" in SPIE Photonics West: "Optical and Quantum Sensing and Precision Metrology II", Jan. 2023 (invitation passed to student).
48. "Nanophotonic cavity QED with cold atoms" in international workshop on Disruptive Approaches to Atom-Light Interfaces, organized by ICFO, Castelldefels, Spain, Oct. 2022.
47. "Towards programmable quantum spin dynamics with trapped atoms coupled to a nanophotonic resonator", AFOSR QIS/AMO Program review meeting, Arlington, VA, Aug 2022.
46. "Entanglement distribution", Midwest Quantum Collaboratory Workshop, Joint by Purdue, Michigan State University, and University of Michigan, Feb. 2022.
45. SPIE Photonics West: "Optical and Quantum Sensing and Precision Metrology II", Jan. 2022 (invitation passed to postdoctoral associate Dr. Tamura).
44. "Universal quench dynamics and Townes soliton formation in attractive two-dimensional Bose gases", AMO/CM seminar, Columbia University, Oct. 2021.

43. "Universal quench dynamics, soliton formation, and quantum entanglement generation in attractive two-dimensional Bose gases", AMO seminar, University of Chicago, Sep. 2021.
42. "Microring resonators on a suspended membrane circuit for atom-light interactions", Integrated Optics: Devices, Materials, and Technologies XXV (OE201) Photonics West 2021.
41. "Coupling single atoms and molecules to nanophotonic resonators", Optical and Quantum Sensing and Precision Metrology (OE502) Photonics West 2021
40. "Engineering atom-nanophotonic hybrid lattices", Birck Nanotechnology Center Faculty seminar, October 2020.
39. "Probing non-equilibrium dynamics with ultracold atoms and photonic lattices", Purdue Physics and Astronomy colloquium, September 2020.
38. "Engineering atom-nanophotonics hybrid lattices", IEEE Photonics Conference (IPC2020), Vancouver, Canada, Sep. 2020.
37. Canceled – "Engineering long-range quantum magnetism with atom-nanophotonic hybrid lattices", 10th International organization of Chinese physicists and astronomers meeting (OCPA10), Taichung, Taiwan, June 2020.
36. "Quench dynamics and Townes soliton formation in two-dimensional Bose gases", AMO seminar, Stanford University, Dec. 2019.
35. "Quench dynamics and Townes soliton formation in two-dimensional Bose gases", AMO/CM seminar, Indiana University at Bloomington, Nov. 2019.
34. "Engineering long-range quantum magnetism with atom-nanophotonic hybrid lattices" AFOSR Program review meeting, Arlington, VA, July 2019.
33. "Trapping single atoms on a nanophotonic circuit with configurable tweezer lattices", Winter Colloquium of Physics of Quantum Electronics, Snowbird, Utah, Jan. 2019.
32. "Novel quantum interface built from hybrid atom-nanophotonic lattices", International OSA network of students Midwest US, Aug 2018.
31. "Quantum matter built from hybrid atom-nanophotonic lattices", AMO seminar, Indiana University at Bloomington, March 2018.
30. "Quantum matter built from hybrid atom-nanophotonic lattices", Physics Colloquium, Indiana University – Purdue University Indianapolis, Feb. 2018
29. "Many-body physics with cold atoms trapped along nanophotonic resonators" in Many-body cavity QED workshop at ITAMP, Harvard University, October 2017
28. "Interfacing cold atoms with nanophotonics for many-body physics" in Session: Interfacing Solid State/nano Physics with Atomic Systems, APS March Meeting, New Orleans LA, March 2017
27. "Analogue gravity and non-equilibrium dynamics in strongly correlated quantum gases", New Laser Scientist Meeting, Rochester NY, Nov 2016
26. "Hybrid atom-nanophotonic lattices for quantum optics and many-body physics" in FOCUS SESSION: Interfacing nanophotonics and plasmonics with cold atoms, 47th Annual APS DAMOP Meeting, Providence RI, May 2016
25. "Hybrid atom-nanophotonic lattices for quantum optics and many-body physics", Hybrid Systems for Quantum Optics, Physikzentrum Bad Honnef, Germany, Jan 2016

24. "Building quantum matter with cold atoms in nanophotonic crystals and cavities", Midwest Cold Atom Workshop, Madison WI, Nov 2015
23. "Strong atom-light interactions in photonic crystals", NIM Resonator QED Conference, Munich, Germany, August 2015
22. "Atom-light interactions in photonic crystals", Birck Nanocenter, Purdue University, West Lafayette IN, June 2015
21. "Strong atom-light interactions in nanophotonic lattices", Max-Planck-Institute of Quantum Optics, Garching, Germany, March 2015
20. "In situ study of two-dimensional quantum gases", Purdue University, West Lafayette IN, Physical Chemistry seminar, Jan 2015
19. "Atom-light interaction in photonic crystals", University of Chicago, Chicago IL, AMO seminar, Nov 2014
18. "Atom-light interaction in photonic crystals", University of California at Merced physics colloquium, Merced CA, Nov 2014
17. "Atom-light interaction in photonic crystals", IAMS Academia Sinica, Taipei Taiwan, July 2014
16. "Atom-light interaction in photonic crystals", 8th International organization of Chinese physicists and astronomers meeting (OCPA 8), Singapore, June 2014
15. "Quantum simulation using cold atoms and a brighter future", University of Illinois at Urbana-Champaign AMO seminar, Urbana IL, Feb 2014
14. "Quantum simulation using cold atoms and a brighter future", Georgia Tech physics colloquium, Atlanta GA, Feb 2014
13. "Quantum simulation using cold atoms and a brighter future", Cornell LASSP seminar, Ithaca NY, Feb 2014
12. "Quantum simulation using cold atoms and a brighter future", Caltech condensed matter seminar, Pasadena CA, Feb 2014
11. "Quantum simulation using cold atoms and a brighter future", Princeton University physics seminar, Princeton NJ, Feb 2014
10. "Quantum simulation using cold atoms and a brighter future", Purdue University AMO seminar, West Lafayette IN, Jan 2014
9. "Cavity QED and quantum optics with trapped atoms in one-dimensional photonic crystals", Conference on Resonator QED, Munich Germany, Sep 2013
8. "In situ probing of two-dimensional quantum gases", 43rd Annual APS DAMOP Meeting, Anaheim CA, June 2012 (Thesis prize session)
7. "Observation of quantum criticality in two-dimensional quantum gases", Caltech IQIM seminar, Pasadena CA, Feb 2012
6. "In situ study of scaling behavior in two-dimensional Bose gases", Caltech CEQS seminar, Pasadena CA, July 2011
5. "In situ study of scaling behavior in two-dimensional Bose gases", AMO seminar, MIT, Cambridge MA, June 2011

4. "In situ study of critical behavior in two-dimensional Bose gases", in Focus session: In-situ imaging of ultracold atomic gases, 42nd Annual APS DAMOP Meeting, Atlanta GA, June 2011
3. "In situ imaging of two-dimensional quantum gases", AMO seminar, University of Illinois at Urbana-Champaign, Urbana IL, May 2011
2. "Exploring classical and quantum criticality in two-dimensional Bose gases", IAMS Academia Sinica, Taipei Taiwan, Jan 2011
1. "Scale invariance and universality in two-dimensional Bose gases", Northwestern University IGERT Seminar, Chicago IL, Oct 2010

TEACHING

PHYS 450: Intermediate Laboratory (Optics Lab) (Fall & Spring 2019-2024)
Lectures and laboratory sessions offered to upper division honor physics students.

PHYS 322: Optics (Fall 2016, Fall 2018)
Upper division course primarily attended by ECE and Physics students.

PHYS 172: Modern Mechanics (Spring 2016, Spring 2018, Spring 2019).
Service course for first-year students.

PHYS 570: Introduction to Ultracold Atomic Physics (Fall 2015, Fall 2017)
PhD-level course designed for students interested in atomic, molecular, and optical physics.

STUDENTS AND POSTDOCS SUPERVISED

Dr. Hikaru Tamura, postdoc (2021-2023), now research assistant professor at the Institute of Molecular Science, Japan.

Dr. May E. Kim, postdoc (2016-2018), now permanent Technical Staff – Quantum Information and Integrated Nanosystems at MIT Lincoln lab.

Cheng-An Chen, PhD (2015-2021), **Springer Thesis Award** 2022 & Purdue Physics **Ramdas thesis prize** 2024, now senior Quantum Engineer at Atom Computing, CO.

Brian Fields, PhD (2016-2021), now Engineer at Opto Atomics, CA.

Ming Zhu, MS & PhD (2017-2022), now Software Engineer at Google, CA.

Tzu-Han Chang, PhD & postdoc (2015-2023), now postdoc at Purdue ECE with Bhav group.

Xinchao Zhou, PhD (2019-2025), now postdoc at Niels Bohr institute, Purdue's **Blisland Dissertation Fellowship** for outstanding PhD candidates, **College of Science Student Travel Award** & **APS DAMOP Student Travel Award**.

Sambit Banerjee, PhD (2019-2025), now Quantum Engineer at Atom Computing, CO, **APS DAMOP Student Travel Award**.

Other PhD students currently advising (6): Rongjie Li, Dipanjan Das, Saivirinch Prabhakavi, Mahmoud Mustafa, Kenneth Scalzi, and Shreya Satya.

Visiting PhD student (institution): Ron Ziv (Technion, Israel, advisor: Prof. Moti Segev).

2017- Served in 35 PhD thesis committees (31 in Physics, 1 in Chemistry, 3 in ECE)

2024 Served as an external thesis committee member for Youngshin Kim (Physics PhD, advisor: Prof. Dominik Schneble, Stony Brook University),

Purdue undergraduate students (& later position): Ting-Wei Hsu (UC-Boulder, Physics PhD), Bruce Edelman (U. Oregon, Physics PhD), Wuxiucheng Wang (U. Rochester, ECE PhD), Zhuo Hann Cheah (U. Rochester, Optics MS), Kehan Liu (Purdue, ECE MS), Braden Buck (UW-Madison, Physics PhD), Elijah Higgins, Eric Liu (Purdue Physics PhD), Eric Reinhardt (U. Alabama, Physics PhD), Josh Friedman (OUR Scholar). Three departmental awards and one university scholar were awarded to the students.

Summer visiting students (institution): Angela Pizutto (Stony Brook U.), Jonah Quirk (U. Southern Indiana), Daniel Orth (U. Dallas), Kevin Knox (SUNY-Oneonta), Joey He (U. Chicago), Will Ward (University of Central Arkansas), Yu-Fan Hsiao (UT-Austin), Bennett Hughes (OSU), Umar Arshad (Miami U.), Joseph Carpenter (Lawrence U.), Beny Verezub (Lake Forest College).

International visiting students (& later position): Zeyang Li (MIT, Physics PhD), Yukai Liu (Princeton, Physics PhD), Qian Wang (U. Chicago, Physics PhD), Xinchao Zhou (Purdue, Physics PhD), Yuan Zhan (UC Boulder, Physics PhD), Siwei Zhang (Columbia, Physics PhD), Wenjun Zhang (Tsinghua, Physics PhD), Yan-Cheng Wei (Harvard, Physics PhD), Lyuhang Wu (Penn State, Physics PhD), Yuanhao Liang (USC, ECE PhD), Kai Zhou (UC Boulder, Physics PhD).

Last updated: August 14, 2025