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Education:

1980, Bachelor in Science in Electrical and Mechanical Engineering, ITESO, Guadalajara, Mexico.
1987 Doctorate in Physics, August 1987 under Prof. H. Jeff Kimble "Optical Bistability with Two-Level Atoms". University of Texas at Austin. Austin, Texas, USA.

Professional experience:

1987-1990, Postdoctoral work at the Department of Physics Harvard University under Prof. Gerald Gabrielse Cambridge, MA, USA,
1991-1996, Assistant Professor, Department of Physics and Astronomy SUNYSB, Stony Brook, NY, USA.
1996-2001, Associate Professor, Department of Physics and Astronomy SUNYSB, Stony Brook, NY, USA.
2001-2003, Professor, Department of Physics and Astronomy SUNYSB, Stony Brook, NY, USA.
2003-present, Professor Department of Physics, UMD, College Park, MD, USA.
2008-present, Co-director of the Physics Frontier Center at the Joint Quantum Institute, UMD, College Park, MD, USA.

Professional service:

American Physical Society: member of DAMOP program committee (1998-2000). Nomination committee (2006-2008). Executive Committee member of Topical Group of Precision Measurements and Fundamental Constants (TGPMFC) of APS (2001-2004). April meeting program committee (2004).
Optical Society of America, member CLEO-QELS committee (2001), program chair CLEO-QELS (2003), general chair CLEO-QELS (2005).
National Science Foundation, member, Committee of Visitors of the Physics Division (2003).
External Overseer Committee, Harvard-MIT Center for Ultracold Atoms (2003-2006).

Member of Editorial Board, Physical Review A (2001-2007).
Member of Editorial Board, Journal of Optics B (2001-2005).
National Science Foundation, Chair, Committee of Visitors of the Physics Division (2006).
External Overseer Committee, Harvard-MIT Center for Ultracold Atoms (2008-2015).
Nomination committee of TGPMFC (2008-2009).
Fellowship committee of TGPMFC (2009-2010).
National Science Foundation, Mathematical and Physical Sciences Advisory Committee Member (2009-2012).
Advisory Board Quantum Optical Information Technology, Consolider-Ingenio 2010 ICFO, Barcelona, Spain (2006-2011)
International Advisory Board, Center for Photonics and Optics, Concepcion, Chile (2010-2015)
National Science Foundation, Committee of Visitors of the Astronomy Division (2011).
National Science Foundation, Committee of Visitors of the Material Sciences Division (2011).
National Science Foundation, Committee of Visitors of the Physics Division (2012).
Optical Society of America, member of the Member and Education Services Council (2012-2015).
Optical Society of America, member of the Meggers Prize committee (2012-2015).
National Science Foundation, Chair of the recruiting committee for the Division of Physics Director (2012).
National Science Foundation member of the MPSAC P5 Subcommittee on Implementing the Particle Physics Project Prioritization Panel (P5) Recommendations (2015).

Honors:

1980 Mejores estudiantes de Mexico, CONACYT-Diario de Mexico.
1983-1984 and 1985-1986 University of Texas Fellowship
1986-1987 IBM Graduate Fellowship.
1992 and 1994 Outstanding Teacher Dept. of Physics and Astronomy SUNYSB.
1994-1998 Precision Measurement Grant, NIST.
1998-1999 Guggenheim Fellowship.
1999 Fellow American Physical Society
2002 Arfken Scholar in Residence, Miami University.
2002-2014 Distinguished Traveling Lecturer, Division of Laser Science, American Physical Society.

2003 Welcome Fellowship UMD.
2004 Fellow of the Optical Society of America.
2005 Fellow of the Institute of Physics (UK).
2005 Corresponding member, Academia Mexicana de la Ciencia.
2010-2011 Philip Merril Faculty Mentor, UMD.
2015 Deans Outstanding Faulty Award, CMPS, UMD.

Research interests: Quantum Optics, Precision Spectroscopy, Fundamental Symmetries.

Publications: 99 scientific publications in refereed journals (list attached).

PUBLICATIONS
a) Refereed papers:

1.- A. T. Rosenberger, L. A. Orozco, H. J. Kimble, "Observation of Optical Bistability with Two-Level Atoms in a Ring Cavity," Phys. Rev. A **28**, 2569, (1983).

2.- L. A. Orozco, A. T. Rosenberger, H. J. Kimble, "Intrinsic Dynamical Instability in Optical Bistability with Two-level Atoms," Phys. Rev. Lett. **53**, 2547, (1984).

3.- L. A. Orozco, H. J. Kimble, A. T. Rosenberger, "Quantitative Test of the Single-Mode Theory of Optical Bistability," Optics Commun. **62**, 54 (1987).

4.- L. A. Orozco, A. T. Rosenberger, H. J. Kimble, "Optical Bistability in the Mixed Absorptive-Dispersive Regime with Two-state Atoms," Phys. Rev. A **36**, 3248 (1987).

5.- M. G. Raizen, L. A. Orozco, Min Xiao, T. L. Boyd, H. J. Kimble, "Squeezed State Generation by the Normal Modes of a Coupled System," Phys. Rev. Lett. **59**, 198 (1987).

6.- L. A. Orozco, M. G. Raizen, Min Xiao, R. J. Brecha, H. J. Kimble, "Squeezed State Generation in Optical Bistability," J. Opt. Soc. Am. B **4**, 1490 (1987).

7.- L. A. Orozco, H. J. Kimble, A. T. Rosenberger, L. A. Lugiato, M. L. Asquini, M, Brambilla, L. M. Narducci, "Single-Mode Instability in Optical Bistability," Phys. Rev. A **39**, 1235 (1989).

8.- G. Gabrielse, X. Fei, L. A. Orozco, S. L. Rolston, R. L. Tjoelker, T. A. Trainor, J. Haas, H. Kalinowsky, W. Kells, "Barkas Effect Observed with Antiprotons and Protons," Phys. Rev. A **40**, 481 (1989).

9.- G. Gabrielse, X. Fei, L. A. Orozco, R. L. Tjoelker, J. Haas, H. Kalinowsky, T. A. Trainor, W. Kells, "Cooling and Slowing Trapped Antiprotons Below 100 milli-eV," Phys. Rev. Lett. **63**, 1360 (1989).

10.- G. Gabrielse, X. Fei, L. A. Orozco, R. L. Tjoelker, J. Haas, H. Kalinowsky, T. A. Trainor, W. Kells, "Thousandfold Improvement in the Measured Antiproton Mass," Phys. Rev. Lett. **65**, 1317 (1990).

11.- G. Gabrielse, J. Tan, P. Clateman, L. A. Orozco, S. L. Rolston, C. H. Tseng, R. L. Tjoelker. "A Superconducting Solenoid System which Cancels Fluctuations in the Ambient Magnetic Field," Journal of Magnetic Resonance **91**, 564 (1991).

12.- A. T. Rosenberger, L. A. Orozco, H. J. Kimble and P. D. Drummond, "Absorptive Optical Bistability in Two-State Atoms," Phys. Rev. A **43**, 6284 (1991).

13.- G. Gwinner, J. A. Behr, S. B. Cahn, A. Ghosh, L. A. Orozco, G. D. Sprouse, F. Xu. "Magneto-Optic Trapping of Radioactive ^{79}Rb," Phys. Rev. Lett. **72**, 3795 (1994).

14.- J. A. Behr, S. B. Cahn, S. B. Dutta, A. Ghosh, G. Gwinner, C. H. Holbrow, L. A. Orozco, G. D. Sprouse, J. Urayama, F. Xu. "A Low-Energy Ion Beam from Alkali Heavy-Ion Reaction Products," Nuc. Inst. and Meth. A **351** 256 (1994).

15.- J. Gripp, S. L. Mielke, L. A. Orozco. "Cascaded Optical Cavities with Two-Level Atoms; Steady State," Phys. Rev. A **51,** 4974 (1995).

16.- R. J. Brecha, L. A. Orozco, M. G. Raizen, Min Xiao and H. J. Kimble. "Observation of Oscillatory Energy Exchange in a Coupled Atom-Cavity System," J. Opt. Soc. Am. B **12**, 2329 (1995).

17.- P. A. Voytas, J. A. Behr, A. Ghosh, G. Gwinner, L. A. Orozco, J. E. Simsarian, G. D. Sprouse, F. Xu, "Laser Traps for Radioactive Isotopes," Hyp. Inter. **97/98**, 529 (1995).

18.- J. Gripp, S. L. Mielke, L. A. Orozco, H. J. Carmichael. "Anharmonicity of the Vacuum Rabi Peaks in a Many-Atom System," Phys. Rev. A **54**, R3746 (1996).

19.- J. Gripp, L. A. Orozco "Evolution of the Vacuum Rabi Peaks in a Many-Atom System," Quantum and Semiclass. Opt. **8**, 823 (1996).

20.- J. E. Simsarian, A. Ghosh, G. Gwinner, L. A. Orozco, G. D. Sprouse, P. A. Voytas. "Magneto-Optic Trapping of ^{210}Fr," Phys. Rev. Lett. **76**, 3522 (1996).

21.- J. E. Simsarian, W. Shi, L. A. Orozco, G. D. Sprouse, W. Z. Zhao, "$7S_{1/2} \rightarrow 9S_{1/2}$ Two-Photon Spectroscopy of Trapped Francium," Opt. Lett. **21**, 1939 (1996).

22.- S. L. Mielke, G. T. Foster, J. Gripp, and L. A. Orozco "Time Response of a Coupled Atoms-Cavity System," Opt. Lett. **22**, 325 (1997).

23.- W. Z. Zhao, J. E. Simsarian, L. A. Orozco, W. Shi and G. D. Sprouse, "Measurement of the $7p\ ^2P_{3/2}$ Level Lifetime in Atomic Francium," Phys. Rev. Lett. **78**, 4169 (1997).

24.- J. Gripp, S. L. Mielke, L. A. Orozco "Evolution of the Vacuum Rabi Peaks in a Detuned Atom-Cavity System," Phys. Rev. A. **56**, 3262 (1997).

25.- G. D. Sprouse, L. A. Orozco "Laser Trapping of Radioactive Atoms," Annual Review of Nuclear and Particle Science **47,** 429 (1997).

26.- G. D. Sprouse, L. A. Orozco, J. E. Simsarian, W. Shi, W. Z. Zhao "Laser Trapping of Radioactive Francium Atoms," Nuc. Inst. and Meth. B **126**, 370 (1997).

27.- J. E. Simsarian, L. A. Orozco, G. D. Sprouse, W. Z. Zhao, "Lifetime Measurement of the 7p Levels of Francium," Phys. Rev. A **57,** 2448 (1998).

28.- S. L. Mielke, G. T. Foster, L. A. Orozco, "Non-Classical Intensity Correlations in cavity QED," Phys. Rev. Lett. **80** 3948 (1998).

29.- G. T. Foster, S. L. Mielke, and L. A. Orozco, "Intensity Correlations in a Noise Driven Diode Laser," J. Opt. Soc. Am. B, **15**, 2646 (1998).

30.- W. Z. Zhao, J. E. Simsarian, L. A. Orozco, and G. D. Sprouse, "A Computer-Based Digital Feedback Control of Laser Frequency Drift," Rev. Sci. Inst. **69**, 3737 (1998).

31.- J. E. Simsarian, W. Z. Zhao, L. A. Orozco, and G. D. Sprouse, "Two-Photon Spectroscopy of the Francium $8S_{1/2}$ Level," Phys. Rev A **59**, 195 (1999).

32.- J. S. Grossman, L. A. Orozco, M. R. Pearson, J. E. Simsarian, G. D. Sprouse, W. Z. Zhao "Hyperfine Anomaly Measurements in Francium Isotopes and the Radial Distribution of Neutrons," Phys. Rev. Lett. **83**, 935 (1999).

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34.- A. R. Lipski, L. A. Orozco, M. R. Pearson, J. E. Simsarian , G. D. Sprouse, W. Z. Zhao, "Gold and Isotopically Enriched Platinium Targets for the Production of Radioactive Beams of Francium," Nucl. Instr. and Meth. A **438**, 217 (1999).

35.- T. C. Killian, S. Kulin, S. D. Bergeson, L. A. Orozco, C. Orzel, and S. L. Rolston, "Creation of an Ultracold Neutral Plasma," Phys. Rev. Lett. **83**, 4776 (1999).

36.- J. S. Grossman, L. A. Orozco, M. R. Pearson, and G. D. Sprouse, "Spectroscopy of Francium Isotopes," Proceedings of the 31st EGAS Conference of the European Group for Atomic Spectroscopy, Editor Fernande Vedel, Physica Scripta **T86**, 16 (2000).

37.- G. T. Foster, S. L. Mielke, and L. A. Orozco "Intensity Correlations in Cavity QED," Phys. Rev. A **61**, 53821 (2000).

38.- H. J. Carmichael, H. M. Castro-Beltran, G. T. Foster, and L. A. Orozco, "Giant Violations of Classical Inequalities through Conditional Time Evolution of Wave-Particle Amplitudes of Light," Phys. Rev. Lett. **85**, 1855 (2000).

39.- G. T. Foster, L. A. Orozco, H. M. Castro-Beltran, and H. J. Carmichael "Quantum State Reduction and Conditional Time Evolution of Wave-Particle Correlations in Cavity QED," Phys. Rev. Lett. **85**, 3149 (2000).

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43.- S. Kulin, S. Aubin, S. Christe, B. Peker, S. L. Rolston and L. A. Orozco, "A Single Hollow-Beam Optical Trap for Cold Atoms," J. Opt. B: Quantum Semiclass. Opt. **3**, 353 (2001).

44.- W. P. Smith, J. E. Reiner, L. A. Orozco, S. Kuhr, H. M. Wiseman "Capture and Release of a Conditional State of a Cavity QED System by Quantum Feedback," Phys. Rev. Lett. **89**, 133601, (2002).

45.- G. T. Foster, W. P. Smith, J. E. Reiner, and L. A. Orozco, "Time-Dependent Electric Field Fluctuations at the Sub-Photon Level," Phys. Rev. A. **66**, 033807, (2002).

46.- G. D. Sprouse, S. Aubin, E. Gomez, J. M. Grossman, L. A. Orozco, M. R. Pearson, and M. True, "Atomic Probes of Electromagnetic and Weak Interactions with Trapped Radioactive Atoms, " Eur. Phys. J. A. **13**, 239 (2002).

47.- G. D. Sprouse, R. P. Fliller, J. S. Grossman, L. A. Orozco, and M. R. Pearson, "Traps for Neutral Radioactive Atoms," Nucl. Physics A **701**, 597c (2002).

48.- S. Aubin, E. Gomez, L. A. Orozco, and G. D. Sprouse "High efficiency magneto-optical trap for unstable isotopes," Rev. Sci. Instr. **74**, 4342 (2003).

49.- S. Aubin, E. Gomez, L. A. Orozco, and G. D. Sprouse "Lifetime measurement of the 9*s* level of atomic francium," Opt. Lett. **28**, 2055 (2003).

50.- J. E. Reiner, F. M. Dimler, and L. A. Orozco "Broadening mechanisms and their effects in non-classical correlations on cavity QED with atomic beams," J. Opt. B: Quantum Semiclass. Opt. **6**, 135 (2004).

51.- W. P. Smith and L. A. Orozco "Quantum feedback in a non-resonant cavity QED system," J. Opt. B: Quantum Semiclass. Opt.**6**, 127 (2004).

52.- J. E. Reiner, F. M. Dimler, and L. A. Orozco "Broadening mechanisms and their effects in non-classical correlations on cavity QED with atomic beams," J. Opt. B: Quantum Semiclass. Opt. **6**, 135 (2004).

53.- J. E. Reiner, W. P. Smith, L. A. Orozco, H. M. Wiseman, and Jay Gambetta "Quantum feedback in a weakly driven cavity QED system," Phys. Rev. A. **70**, 023819, (2004).

54.- S. Aubin, E. Gomez, L. A. Orozco, and G. D. Sprouse, "Lifetimes of the 9s and 8p levels of atomic francium," Phys. Rev. A **70**, 042502 (2004).

55.- S. Aubin, E. Gomez, K. Gulyuz, L. A. Orozco, J. Sell, and G. D. Sprouse, "Francium developments at Stony Brook," Nucl. Phys. A **746**, 459c (2004).

56.- E. Gomez, S. Aubin, L. A. Orozco, and G. D. Sprouse, "Lifetime and hyperfine splitting measurements on the 7s and 6p levels in rubidium," J. Opt. Soc. Am. B **21**, 2058 (2004).

57.- J. Gea-Banacloche, T. C. Burt, P. R. Rice, and L. A. Orozco "Entangled and Disentangled Evolution for a Single Atom in a Driven Cavity," Phys. Rev. Lett. **94**, 053603 (2005).

58.- E. Gomez, L. A. Orozco, A. Perez Galvan, G. D. Sprouse "Lifetime measurement of the 8s level in francium," Phys. Rev. A **71**, 062504, (2005).

59.- E. Gomez, F. Baumer, A. D. Lange, G. D. Sprouse, and L. A. Orozco "Lifetime measurement of the 6s level of rubidium," Phys. Rev. A **72**, 012502, (2005).

60.- P. R. Rice, J. Gea-Banacloche, M. L. Terraciano, D. L.Freimund, and L. A. Orozco "Steady State Entanglement in Cavity QED," Opt. Express **14**, 4514 (2006).

61.- E. Gomez, L. A. Orozco, and G. D. Sprouse "Spectroscopy with trapped francium: advances and perspectives for weak interaction studies," Rep. Prog. Phys **66**, 79, (2006).

62.- G. Gwinner, E. Gomez, L. A. Orozco, A. Perez Galvan, D. Sheng, Y. Zhao, G. D. Sprouse, J. A. Behr, K. P. Jackson, M. R. Pearson, S. Aubin, and V. V. Flambaum "Fundamental symmetries studies with cold trapped francium atoms at ISAC," Hyp. Int. **172** , 45 (2006).

62.- M. L. Terraciano, R. Olson Knell, D. L. Freimund, L. A. Orozco, J. P. Clemens, and P. R. Rice, "Enhanced spontaneous emission into the mode of a cavity QED system," Opt. Lett. **32**, 982 (2007).

63.- E. Gomez, S. Aubin, G. D. Sprouse, L. A. Orozco, and D. P. DeMille, "Measurement method for the nuclear anapole moment of laser-trapped alkali-metal atoms," Phys. Rev. A **75**, 033418 (2007).

64.- A. Perez Galvan, Y Zhao, L. A. Orozco E. Gomez, A. D. Lange, F. Baumer, G. D. Sprouse "Comparison of hyperfine anomalies in the 5S1/2 and 6S1/2 levels of 85Rb and 87Rb," Phys. Lett. B. A **655**, 114 (2007).

65.- E. Gomez, S. Aubin, L. A. Orozco, G. D. Sprouse, E. Iskrenova-Tchoukova, and M. S. Safronova "Nuclear Magnetic Moment of ^{210}Fr: A Combined Theoretical and Experimental Approach," Phys. Rev. Lett. **100**, 172502 (2008).

66.- A. Perez Galvan, Y. Shao, and L. A. Orozco "Measurement of the hyperfine splitting of the $6S_{1/2}$ level in rubidium," Phys. Rev. A **78**, 012502 (2008)

67.- F. E. Becerra, R. T. Willis, S. L. Rolston, and L. A. Orozco "Nondegenerate four-wave mixing in rubidium vapor: The diamond configuration," Phys. Rev. A **78**, 013834 (2008).

68.- D. Sheng, A. Perez Galvan, and L. A. Orozco "Lifetime measurements of the 5d states of rubidium," Phys. Rev. A **78**, 062506 (2008).

69.- R. T. Willis, F. E. Becerra, L. A. Orozco, and S. L. Rolston, "Four-wave mixing in the diamond configuration in an atomic vapor," Phys. Rev. A **79**, 033814 (2009).

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74.- P. Barberis-Blostein, D. G. Norris, L. A. Orozco and H. J. Carmichael, "From quantum feedback to probabilistic error correction: manipulation of quantum beats in cavity QED," New J. Phys. **12,** 023002 (2010).

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81.- Z. Kim, C. P. Vlahacos, J. E. Hoffman, J. A. Grover, K. D. Voigt, B. K. Cooper, C. J. Ballard, B. S. Palmer, M. Hafezi, J. M. Taylor, J. R. Anderson, A. J. Dragt, C. J. Lobb,

L. A. Orozco, S. L. Rolston, and F. C. Wellstood, “Thin-film superconducting resonator tunable to the ground-state h1perfine splitting of 87Rb” AIP Advances **1**, 042107 (2011).

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85.- D. Sheng, J. Zhang , and L. A. Orozco, “Sensitivity test of a blue-detuned dipole trap designed for parity non-conservation measurements in Fr,” Rev. Sci. Instrum. **83**, 043106 (2012).

86.- A. D. Cimmarusti, C. A. Schroeder, B. D. Patterson, L. A. Orozco, P Barberis-Blostein, and H. J. Carmichael, “Control of conditional quantum beats in cavity QED: amplitude decoherence and phase shifts,” New J. Phys. **15,** 023002 (2013).

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94.- R. Collister, G. Gwinner, M. Tandecki, J. A. Behr, M. R. Pearson, J. Zhang, L. A. Orozco, S. Aubin, E. Gomez, "Isotope shifts in francium isotopes $^{206\text{-}213}$Fr and 221Fr," Phys. Rev. A **90**, 052502 (2014).

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