VITA **Leo W. Hollberg** **October 2022**

PERSONAL DATA	Born November 6, 1952; Denver Colorado
EDUCATION	University of Colorado, Boulder, CO, Ph.D. in Physics - 1984
	Stanford University, Stanford CA, B.S. in Physics - 1976
EXPERIENCE	
9/2011- Present	Professor (research), Dept. of Physics, Stanford University
5/2009 – 8/2011	Chief Technical Officer, AOSense, Sunnyvale CA
10/2008 – 4/2009	Technical consulting
11/85-9/2008	Staff scientist and Group Leader National Institute of Standards and Technology, Time and Frequency Division, Boulder, Colorado
9/88-9/2008	Lecturer University of Colorado, Department of Physics
4/84-11/85	Postdoctoral position at A.T.&T. Bell Labs, Holmdel, NJ with S. Chu and R. Slusher
1/84-4/84	Postdoctoral position at the Joint Institute for Laboratory Astrophysics with J.L. Hall
1977-1984	Research assistant with J. L. Hall at the Joint Institute for Laboratory Astrophysics (JILA), doing thesis work in high-resolution laser spectroscopy, atomic physics and nonlinear optics.
1973-1990 part-time	Business experience with family greenhouse business including aspects of management and general business operation
1976-1977 part-time	Research assistant with the petro-physics and remote sensing division of the United States Geological Survey. Working on Fourier transform and classical infrared spectroscopy for remote sensing applications
1975	Teaching assistant, undergraduates Dept. Physics, Stanford University

PROFESSIONAL ASSOCIATIONS

American Physical Society (APS), Optical Society of America (OSA), International IEEE

AWARDS and RECOGNITION

Department of Commerce Gold Medal Award,
"For revolutionizing the way frequency is measured (2001).

Fellow, Optical Society of America, (2003).
Fellow, American Physical Society, (2003).

Department of Commerce, Silver Medal Award.
"For design and development of ultra-miniature atomic clocks and magnetometers," (2005).

I.I. Rabi award of the IEEE-UFFC, International Frequency Control Symposium,
"For seminal contribution to optical frequency metrology with the development of stable optical frequency standards and related femtosecond clockwork," shared w/ P. Gill, NPL-UK. (2007).

William F. Meggers Award, of the Optical Society of America,
"For seminal contributions to the development of diode lasers as powerful spectroscopic tools, development of femtosecond combs, and demonstration of unique quantum effects in the interaction between light and atoms," (2009).

Rank Prize for optoelectronics in 2014, from the Rank Prize Funds, for:

"For the creation and demonstration of the first chip scale atomic clock", award shared with my previous colleagues J. Kitching and S. Knappe.

PATENTS

Ma Long-sheng, Leo Hollberg, Jon H. Shirley and John L. Hall, "Modulation Transfer Spectroscopy for Stabilizing Lasers," U. S. Pat. Num. 4,590,597. Issued 1986.

B. Dahmani and L.W. Hollberg, "Optical Feedback Locking of Semiconductor Lasers," U. S. Pat. Num. 4,907,237 , issued 1990.

J. Kitching and L. Hollberg, "Miniature frequency standard based on all-optical containment vessel," U.S patent application # 20020163394, grant # 6806784, issued November 2002.

J. Kitching, L. Hollberg, R. Wynands, S. Knappe, "Method of minimizing the short-term frequency instability of laser-pumped atomic clocks," patent # 6831522. Issued December, 2004.

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T.H. Loftus A. Vitouchkine, M.R. Matthews, A.T. Black, I. Teper, L.W. Hollberg, T.L. Gustavson, B. Young, "Device for producing laser-cooled atoms", application # 20140061454, issued March 2014.

T.H. Loftus, Artyom Vitouchkin, L. Hollberg, "Permanent magnet axial field Zeeman slower", patent number 8710428. Issued April 2014.

PUBLICATIONS – L. Hollberg

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