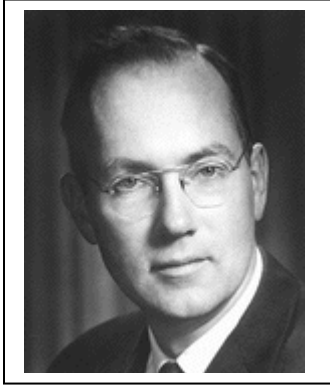




## IEEE / LEOS 30th Anniversary Program

presented jointly with:  
*Optical Society of No. California and MIT Club of No. California*



Dr. Townes shared the 1964 Nobel Laureate in Physics for:

*"Fundamental work in the field of quantum electronics, which has led to the construction of oscillators and amplifiers based on the maser-laser principle"*

### An Illustrated Dialog with Dr. Charles H. Townes

and two long-time colleagues:

Dr. Anthony E. Siegman  
Stanford University

Dr. Elsa Garmire  
Dartmouth

covering Dr. Townes' distinguished seven decades-long and still active career with an emphasis on "How the Laser Happened".

May 22, 2007 (Tuesday)

Palo Alto Research Center, Inc. (PARC) Auditorium,  
3333 Coyote Hill Blvd.  
Palo Alto, CA 94306

<http://www.parc.com/about/directions.html>

6:30 pm: Reception with appetizers and beverages

7:30 pm to 8:30 pm: Program

Cost: \$20 - Pre-registration required by Sunday May 20 (no walk-ins)

#### To Register:

Electronic registration is via the smarTrans system at MIT:

<https://alum.mit.edu/smarTrans/user/Register.dyn?eventID=13242&groupID=154>

(Please click the "nonalumni registration" tab on the event registration webpage.)



## **Biographies of Speakers:**

### **Dr. Charles H. Townes**

([http://nobelprize.org/nobel\\_prizes/physics/laureates/1964/index.html](http://nobelprize.org/nobel_prizes/physics/laureates/1964/index.html))

University Professor

University of California at Berkeley

Educated at Furman University, Duke University and Caltech, Dr. Townes was a member of Technical staff of Bell Telephone Laboratories from 1933 to 1947. He worked extensively during WWII on radar bombing systems. Joining the physics faculty at Columbia University in 1948 he applied microwave techniques from WWII radar research to spectroscopy.

His conceptualization of the MASER in the early 1950's and his demonstration of the first amplification and generation of electromagnetic wave by stimulated emission was achieved in 1954. Working with Dr. A. L. Schawlow, they then showed, in an important paper in the late 1950's, that the maser principle could be extended to the optical and infrared region. The first optical maser (which became known as the laser) was achieved in 1960 and launched one of the greatest technological innovations of the past century. .

After serving in Washington at the Institute for Defense Analysis from 1959 to 1961, he was appointed Provost and Professor of Physics at MIT in 1961. In 1967 he was appointed University Professor at UCB, a post he holds to this day.

In addition to the 1964 Nobel Prize in Physics and 27 honorary degrees, Dr. Townes recently received the Templeton Prize for contributions to understanding of religion.

### **Professor Anthony Siegman**

McMurtry Professor of Engineering Emeritus, Stanford University

Past President, Optical Society of America (1999)

Received undergraduate and graduate degrees from Harvard, UCLA and Stanford, and then served on the Electrical Engineering and Applied Physics faculties at Stanford from 1956 through 1998. During his faculty career he supervised some 40 PhD students, wrote three books and many technical papers including a widely known text and reference book on "LASERS," and received many professional honors including election to the National Academy of Engineering in 1973 and the National Academy of Sciences in 1988. Following his retirement in 1998 he served as president of the Optical Society of America and has since been engaged in technical writing, professional society activities, and technical and legal consulting.

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## **Professor Elsa Garmire**

(<http://engineering.dartmouth.edu/thayer/faculty/elsagarmire.html>)

Sydney E. Junkins 1887 Professor of Engineering, Dartmouth  
Past President, Optical Society of America (1995)

Received her A.B. Physics at Harvard University 1961 and Ph.D., Physics at M.I.T. 1965 as a student of Dr. Townes. After post-doctoral work at Caltech, she joined the University of Southern California where she was named William Hogue Professor of Electrical Engineering and director of the Center for Laser Studies. She came to Dartmouth's Thayer School of Engineering in 1995 and served for 2 years as dean before making the decision to shift her focus back to research and teaching. Her honors include American Physical Society (1994) Fellow, National Academy of Engineering (1989) Life Member, Institute of Electronics and Electrical Engineers (1980) Fellow and Life Member and Optical Society of America (1981) Fellow. She holds several patents on optical technologies.

Her research interests include non-linear optics; integrated optics and semiconductor photonic devices; lasers; electro-optics; fiber optics.

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