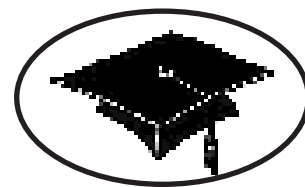


---

# Berkeley Emeriti

# TI M E S



May 2004

**Professor Emeritus Joseph Kerman**  
**Department of Music**  
**“Classical Music: Study of the Art”**  
**Saturday, May 8, 2004**

Professor Joseph Kerman of the Music Department will be our guest speaker at the UCBEA luncheon in the Faculty Club on Saturday, May 8, 2004.

Professor Kerman was born in London, England. He received a B.A. from New York University (1943) and a Ph.D. from Princeton University (1950). He joined the University Music Department in 1951, and except for brief stint at Westminster Choir College, Oxford University (1972-74), taught here until his retirement in 1994.

An honorary fellow of the Academy of Music in London and a fellow of the American Academy of Arts and Sciences, Professor Kerman was a Guggenheim Fellow in 1960, a Fulbright Fellow in 1966, and recipient of the American Society of Composers, Authors and Publishers' Deems Taylor Award. His books reflect the broad range of his musicological interest: *Opera as Drama*, (1956); *The Elizabethan Madrigal*, (1962); *The Beethoven Quartets*, (1966); *The Masses and Motets of William Byrd*, (1980); *Contemplating Music: Challenges to Musicology*, (1985); *Write All These Down*, (1994); *Concerto Conversations*, a compilation of the Charles Eliot Norton lectures delivered at Harvard University, (1999) and *Listen*, a text, (2003). In addition to these achievements, Professor Kerman was selected by the Academic Senate to deliver the Faculty Research Lecture in 1986.

Come to hear the author of whom Leon Botstein, Director, American Symphony Orchestra has said, “Kerman’s

### Check-Off List

\_\_\_\_\_ The UCBEA May luncheon serves as the annual meeting for the election of officers and board members. You will receive a slate ballot which includes space for write-in candidates. Come! Cast your ballot! Throw the rascals in!

\_\_\_\_\_ Mark your calendars for the luncheon meetings of the coming year:

- September 18<sup>th</sup>, 2004
- November 13<sup>th</sup>, 2004
- January 22<sup>nd</sup>, 2005
- March 12<sup>th</sup>, 2005

**UCB EMERITI ASSOCIATION  
EXECUTIVE COMMITTEE**

**2003-2004**

**President**

Gene Brucker

**Vice President**

Paola Timiras

**Treasurer**

George Tyndall

**Stewards**

Betty Carpenter

Sue Cork

Mary Dee Vermeulen

Todd Smith

**Members at Large**

Claude Babcock

George Leitmann

Austin Ranney

Larry Waldron

Sheridan Warrick

**Mailing Address**

UC Berkeley Emeriti Association

2 Boalt Hall, # 7200

Berkeley, CA 94720-7200

**Director, UCB Retirement Center**

Shelley Glazer

510/642-5461

sdg@uclink.berkeley.edu

**Administrative Specialist**

André S. Porter

asporter@uclink.berkeley.edu

Office UCB Retirement Center  
2 Boalt Hall, # 7200  
Berkeley, CA 94720-7200

Hours Monday – Friday  
8:30 am–4:30 pm  
Closed Noon–1 pm

Telephone 510/642-5461  
Fax 510/643-1460  
Web site <http://thecenter.berkeley.edu>  
Email [ucbrc@uclink.berkeley.edu](mailto:ucbrc@uclink.berkeley.edu)

**Light on the Laser - How it Happened**

On Saturday, March 20th, 2004, Professor Charles Townes of the physics department presented to the UCBEA luncheon a fascinating account of the development of the laser. This remarkable development, for which Professor Townes was awarded the Nobel Prize in 1964, today has applications undreamed of during the years when he was working to give it birth. The term LASER, coined by Townes and his graduate students, is an abbreviation for Light Amplification by Stimulated Emission of Radiation.

The basic theory of stimulated emission was first proposed by Einstein in 1917. In quantum theory atoms or molecules move in discrete steps from one energy level to another. They may absorb electromagnetic radiation and be placed in a higher energy level, or they may descend to a lower level causing emission of radiation. It is the latter phenomenon that is exploited in the laser.

Although Professor Townes' original objective had been to produce a source of pure infrared radiation for use in molecular spectroscopy, he chose first to work with microwaves because the development of radar had produced equipment suitable for his purpose. Many scientists considered his idea of stimulated emission unworkable, particularly physicists most familiar with quantum mechanics. In a brief conversation with the great physicist Niels Bohr, Townes was told flatly that his idea wouldn't work. The mathematician John Von Neumann also was initially skeptical but after some reflection conceded that it might work. The chairman of Townes's department at Columbia University urged him to give up on stimulated emission because the work was apparently going nowhere and dissipating valuable university resources. However, Townes was then an associate professor with tenure and refused to give up his pursuit.

Sitting one morning on a park bench in Washington D.C., Townes had a *eureka* moment in which he realized he did not have to accept the preponderance of low energy molecules which were damping stimulated emission because methods had been developed to separate high-energy molecules from those with low energy. Pursuing this approach, Townes and his graduate students eventually succeeded in getting spectacular amplification of coherent microwaves (coherent waves vibrate like an army marching in step) with a device they called MASER. (Microwave Amplification by Stimulated Emission of Radiation.)

At the Bell Labs in 1958, Townes and his brother-in-law, Arthur Shawlow, proposed an optical maser, or laser, using two mirrors to reflect light back and forth stimulating atoms to emit radiation. Their plan was published and patented, and a working laser was first made by T.H. Maiman at Hughes Aircraft Co.

Scientific and technical developments flourished, and the laser has found a host of applications in medicine, industry and communications and has been a tool for a number of Nobel Prize winners. It is encountered in everyday life in bar code scanners and CD players. Laser light has been bounced off reflectors on the moon, placed by NASA at Townes' suggestion, enabling measuring the distance to the moon to a precision of one inch.

Professor Townes made several insightful observations about scientific  
*see p.3*

**Berkeley Emeriti**

**F I M E S**



Volume 13, Number 4

Published before each meeting of the UC Berkeley Emeriti Association: To provide closer networking for members with meeting announcements, meeting reviews, executive committee actions, pertinent campus news, and to reach out to members who cannot attend the meetings.

Editor: Claude Babcock

Phone: 510/848-3368

Email: [cbabcock@uclink.berkeley.edu](mailto:cbabcock@uclink.berkeley.edu)

## Got Books?

The College of Letters and Sciences (L&S) has prepared a list of books for the intellectually curious reader. The first Berkeley Book List, to be issued annually the first week of December, includes 88 recommendations in 15 disciplines from Anthropology to Social Theory. This list of favorite books ranges from classics and traditional textbooks to esoteric tomes and professors' personal favorites. Among the contributors are mathematician Vaughan Jones, sociologist John Lie, astrophysicist George Smoot, and Chancellor Robert M. Berdahl. These scholars have written an introduction to their lists as well as short, tantalizing descriptions of the books.

"It might seem non-academic for a cell biologist to be reading about desire, love, and superstition, yet it is all very biological and very relevant ..." writes Richard Steinhardt of his picks *The Evolution of Desires: Strategies of Human Mating*, David Bass, and *100 Love Sonnets*, Pablo Neruda. Geologist Walter Alvarez writes of John McPhee's single-cover package of geological books *Annals of the Former World* that it beautifully describes how our understanding of Earth "has completely changed with the discovery of plate tectonics and the exploration of many other planets and moons." L&S Executive Dean Ralph Hexter says of the Berkeley Book list "...the best books somehow take possession of us even as we take possession of them."

*continued from p.2*

research. First, an investigator must be free to follow his own ideas even if those ideas do not have foreseeable practical use, as was the case with the laser. Second, interdisciplinarity plays an important role in scientific and technical investigations. As noted above, many physicists did not believe he could achieve his objective of coherent amplification, but electrical engineers, more familiar with methods of amplification, did not see the problem as the physicists did, perhaps because they didn't know as much about quantum mechanics. Third, science is a social activity. Communication between investigators is vital, because one person may see significance in the work of another that is not recognized by the person who produced the work.

Looking at the brilliant development of the laser Professor Townes says he can identify himself with the

## Panunzio Prize to Professor Hammel

Professor Emeritus Eugene Hammel of the Anthropology and Demography Departments has been named recipient of the Constantine Panunzio Distinguished Emeriti Award. This Award, consisting of a \$4000 cash prize and a certificate, is in recognition of outstanding scholarly work or service performed by a University of California emeritus or emerita in retirement. Consistent with the late Professor Panunzio's field of sociology, work or service is to be in the humanities or social sciences.

Those of you who attended the November 8, 2003, luncheon may recall that the Board of the Emeriti Association presented the Berkeley Distinguished Emeriti Prize to Eugene Hammel, commenting on his accomplishments following his retirement in 1993. He taught in the Demography Department, served as chair in 1996-97, chaired five doctoral dissertations, supervised seven postdoctoral fellows, published some 50 papers and served on four national advisory committees. During the last three years Gene Hammel has been a central contributor to the National Academy of Science's efforts to bring the nation's scientific resources to bear on countering the crisis of terrorism. His high-profile work is one of the most visible and important contributions of UC Berkeley to the national arena where science helps shape policy.

**Marie-Anne Phelps Seabury**

**"Mappie"**

1923 - 2004

Member, Executive Board, UCBEA

Editor, *Emeriti Times*

## SATISFACTORY SERVICES



**We Need New Recommendations**



Please submit new listings to [ucbrc@uclink.berkeley.edu](mailto:ucbrc@uclink.berkeley.edu), or you can phone the editor at 848-3368. You can view all listings at <http://thecenter.berkeley.edu/ucbea>

### What I'll Do During My Summer Vacation

**...read a book.** University of California Press is offering a 15% discount on all books. A code, which you can get from the Retirement Center is required to receive the discount. The code may be used for phone or Internet orders.

**...smell the roses.** Beginning May 31, the UC Botanical Garden will have extended hours Wednesdays through Sundays until 8 pm. I've free admission with my retiree ID card.

**...see a free flick on first Thursday.** At 5:30 on May 6<sup>th</sup> (PFA Theater, 2575 Bancroft Way @ Bowditch), *The Bigamist* (U.S., 1953), Ida Lupino's taut, compassionate drama of a salesman commuting between wives in San Francisco and Los Angeles **or**, on June 3<sup>rd</sup> *The Savage Eye* (U.S., 1959), a landmark of independent filmmaking, introduced by Thom Andersen, creator of *Los Angeles Plays Itself*, the title of the series playing the PFA during June.

**...be a day tripper.** The UC Retirement Center invites all of us on an excursion to the Monterey Bay Aquarium on Friday, June 4<sup>th</sup>. A chartered bus leaves campus at 7:30am with a scheduled return at 6 pm.. This year the Aquarium is celebrating its 20<sup>th</sup> anniversary with special events. Highlights include a new shark exhibit and a new visitors' entry gallery. Midway through the tour we will enjoy lunch on Cannery Row at Bubba Gump's.

The cost for this day trip—bus, lunch and Aquarium—is \$55. For more information or to have a reservation packet sent to you, please call the Center at (510) 642-5461.

