
Berkeley Emeriti

T I M E S



September 2011



Charles H. Townes, PhD

Professor Emeritus, Physics; Professor in the Graduate School; Nobel Laureate

“The Chanciness and Fun of a Career in Physics”

Saturday, September 24, 2011
The Faculty Club

Physicist and Nobel Laureate Charles Townes, who will add UC’s Distinguished Emeritus Award this fall to his long list of accolades, offered early evidence of his abilities and promise as a young college student at Furman University in Greenville, South Carolina. There he completed the requirements for a B.S. degree in Physics as well as a B.A. in Modern Languages, graduating summa cum laude. Not content with just that, he also explored the realm of natural history and served as curator of the Furman museum.

But it was the pursuit of Physics, so ‘beautifully logical’ in Townes’ view, which brought him to California Institute of Technology in Pasadena where he received his doctorate in 1939. Joining Bell Laboratories in New Jersey for a period that extended through 1947, Townes worked extensively during World War II on designing radar bombing systems. In 1948 he joined Columbia University as an Associate Professor of Physics and continued research begun at Bell in microwave physics, particularly studying the interactions between microwaves and molecules and the use of microwave spectra to study the structure of molecules, atoms, and nuclei. Together with his students, Dr. Townes coined the word “maser” for a device they created that demonstrated the first amplification and generation of electromagnetic waves by stimulated emission. Maser was an acronym for microwave amplification by stimulated emission of radiation. In a few short years he was appointed Professor, then Executive Director of the Columbia Radiation Lab and from 1952-1955 Chair of the Physics Dept.

In 1961 he became Provost and Professor of Physics at MIT. Working with his brother-in-law (formerly a professor at Stanford University), Townes conceived the idea for amplifying light into an intense beam that could penetrate the hardest materials on earth. This led to the development of the laser, a tool that has revolutionized industry, medicine, communications and astronomy. In 1964 Townes, together with two Russians, was awarded the Nobel Prize in Physics. He was appointed University Professor at the University of California in 1967.

Name a scientific award or honor and it’s likely Professor Townes has received it: Guggenheim Fellow, Fulbright Lecturer, Presidential advisor, National Medal of Science—the list is extensive, with the most recent being the 2005 Templeton Prize, 2006 Vennevar Bush medal, and the International

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Berkeley Emeriti

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Chanciness and Fun, continued...

Leonardo Award (2009) from the Russian Embassy for contributions to the development of physics and the creation of laser technology.

When asked six years ago as he approached his 90th birthday the secret to a long life, Townes replied, "Good luck is one, but also just having a good time. I come in on Saturdays, and I work evenings both at my desk and in the lab. But I think I'm just having a good time doing physics and science. I'd say the secret has been being able to do things that I like, and keeping active." Wise words from a wise man.

50 years post-laser

In an article published (Jan.19, 2010) in the UCB News Center, "Charles Townes honored during celebration of laser's 50th birthday," writer Robert Sanders asks

What would life be like without the laser? No DVDs, no precision laser surgery, no high-speed optical communication, no laser light shows over the pyramids at Giza.

He goes on to say we have to thank Charles Townes because 50 (now 51) years ago the first working laser was built to Townes's specifications, launching the fields of quantum electronics and photonics. Last year's celebratory event, kicked off with a LaserFest exhibit at the Lawrence Hall of Science, highlighted the impact of the early maser-laser work. Sanders points out that entire fields have developed around the laser, which plays an essential role in the fields of astronomy, chemistry, physics and biology. He adds that since 1964 when Townes received his Prize, more than a dozen Nobel Prizes have been awarded for work done with lasers. "Lasers have been incorporated in consumer electronics, telecommunications equipment, surveying equipment and printers, dentistry and corrective eye surgery, light shows and laser pointers."

Berkeley and the Nobel Prize: Some context

A newcomer to the UC Berkeley campus might notice a sign designating a parking space for "Nobel Laureate". One might be tempted to think the space was reserved for one individual. A little online research, however, indicates that Berkeley has had 21 Nobel Laureates in its history of research and discovery, beginning with physicist Ernest Lawrence in 1939 for his discovery of the cyclotron. Including Charles Townes, eight Berkeley professors have been awarded the Nobel in physics—the most recent of whom are Steven Chu, 1997, now Secretary of Energy in the Obama administration and George Smoot, 2006. Given that more than 100 Nobel Prizes in Physics have been awarded since 1901, eight awarded to Berkeley professors is notable.

Other UC Berkeley Nobel Laureates represent a wide range of scholarship in economics, chemistry, molecular and cell biology, and Slavic language/literature. In addition 25 alumni have been awarded the Nobel Prize.

President's Message

Dear Colleagues,

I am honored to write to you as the president of the UC Berkeley Emeriti Association for 2011-2012. Before discussing UCBEA priorities, I wish to express thanks to my predecessor, Roger Glassey, who provided exemplary leadership to the association during his presidency (2009-2011). He serves as a model for me.

This promises to be an exciting year for UCBEA. We have an excellent array of speakers for our five Saturday luncheons, beginning with Professor Charles H. Townes, Nobel Laureate, who will receive the annual Distinguished Emeritus Award. Other speakers include Professors Paula Fass (History), Kenneth Goldberg (IEOR and New Media Center) and Charles Henry (African American Studies). Our final speaker will be announced shortly. We will continue to send your Emeriti Times five times a year with useful information and interesting features.

In addition to our traditional activities, we have **two particular priorities** for the forthcoming year. First, the Association is initiating a **mentorship program** focusing on two important campus communities: undergraduate students who are the first in their families to attend college/university and junior/new faculty members at Berkeley. With the wisdom and experience Emeriti faculty possess, Emeriti can assist the adjustment of members of both constituencies to the Berkeley environment. We are still in need of volunteers and strongly encourage your involvement (see p. 4). Please contact me or the Retirement Center to participate.

A second priority will be **enlarging our membership**. The more members we have enhances our ability to advocate on matters of particular concern for retirees such as health care, housing, parking, and medical insurance. Moreover, the Association's sole income source is membership dues. We do not receive any financial support from the campus. Our expanded activities require additional revenue. Finally, the larger the membership, the more diverse our community will be with opportunities to make new friendships.

I look forward to being your representative in campus and system-wide Emeriti-related matters. Please feel free to contact me if I can be of assistance to you: eepstein@berkeley.edu, 510/527-7379 (home) and 510/502-2376 (cell).

With personal good wishes,

Ed Epstein, President, UCBEA

Ask Fidelity

I just retired a couple of months ago. How often should I check my account?

Regular check-ins can be important in maintaining your retirement strategy and making your money last. Every 6 months, review your account to make sure your portfolio matches your current situation and rebalance, when necessary, as your asset allocation may change due to market fluctuations. For more information on how to manage your UC Retirement Savings Plans in retirement, go to www.ucfocusonyourfuture.com > Retired from UC?

Do I need to do anything different with my investments now that I am retired?

Yes, it is especially important to make sure your portfolio is allocated properly to match your needs and risk. Asset allocation is the process of spreading your investments among different asset classes: stocks, bonds, and short-term investments (such as cash). Since different asset classes react to changing market conditions in different ways, appropriate asset allocation can help you maintain confidence through economic ups and downs and even increase your potential for better returns over time. Remember—neither diversification nor asset allocation ensures a profit or guarantees against loss.

In determining the right asset allocation strategy for you, consider your unique financial situation, comfort with investment risk and flexibility, retirement goals and time frame .

In retirement, you may want to gradually shift toward more conservative investments, such as bond or money market funds. A conservative mix focuses more on the preservation of your money, but should not exclude stocks or stock funds (since growth will still be important – particularly during your earlier retirement years). With your retirement likely to span thirty years or so, you'll want to find a balance between growth and preservation.

Fidelity Investments: Preserving your Savings for Future Generations **Wednesday, October 12, 2pm-3:30pm**

This class will help you understand key tools for estate planning. You'll also learn about strategies for gifting and insurance replacement. See what you need to consider when you're designating your beneficiaries, and acquire tools and resources that can help you take the next step. Advance registration required; contact the Center at ucbrc@berkeley.edu or 510/642-5461 to register.

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Emeriti Mentors Needed for Fall Program Launch

As stated in the President's Message, the Emeriti Association needs your participation to successfully launch the Mentorship program this fall. Emeriti are uniquely qualified to assist. You know first-hand the challenges an undergrad who is the first in the family to attend college faces as well as those of a new faculty member. Contact Caroline Kane at kanecm@berkeley.edu, for more information or to participate.

Volunteer Opportunities

**The Lawrence Hall of Science is looking for volunteers to work with children and their families in our Ingenuity in Action exhibit. The exhibit focuses on the engineering design process, asking visitors to design, build, and test solutions to engineering challenges. Our next volunteer orientation is Saturday, September 24th from 10am-12pm. No engineering experience needed! More info at http://lawrencehallofscience.org/get_involved/join_our_team/volunteer.

**Chabot Space & Science Center volunteers make earth and space science come alive for visitors through interactive and hands-on experiences. Volunteers serve as exhibit guides, school group guides, and ambassadors doing community outreach. The Chabot Space & Science Center in the Oakland hills will host a Volunteer Orientation on Saturday, October 1 from 10:00am to 2:00pm.

For more information on volunteer opportunities and to RSVP for orientation, visit <http://www.chabot.space.org/adult-volunteers.htm> or email the Volunteer Department at volunteers@chabot.space.org