

can be effectively hidden in large underground cavities. An estimate of the effectiveness of the method indicates that a yield of more than 300 kilotons could be made to look seismically like a yield of 1 kiloton." The consequent attention paid to the details of seismically detecting blasts whose true power was surreptitiously decoupled from their detectable power led eventually to the limited test ban treaty of 1963.

Latter was the first to point out the significance of x-ray emissions from highly efficient nuclear weapons when detonated above the atmosphere. Such x-ray emissions became of vital concern to ABM systems and efforts to circumvent missile defense systems.

Latter wrote or cowrote more than 70 papers dealing with issues of importance to national defense and nuclear defense systems. In 1958, he and Edward Teller wrote the book *Our Nuclear Future: Facts, Dangers and Opportunities* (Criterion Books) in which they argued strongly for nuclear weapons testing and noted that a determined Soviet Union could hide its tests so that detection from the outside would be improbable.

He left Rand in 1971 to found his own defense research concern, R&D Associates, from which he retired in 1975.

Throughout his professional career, Latter was an imaginative and energetic problem solver. His role as an adviser to several defense institutions was frequently augmented by his less formal interactions with decision-makers in the Departments of Energy and Defense. He preferred to work with others rather than alone, which fitted well with his dual roles as an administrator and researcher. His relentless and lengthy pursuit of an interesting subject or unsolved problem often exhausted his fellow workers, but he seldom abandoned a matter until he understood it well enough to be bored with his own explorations. His strength of character was often hidden behind a gentle and courteous manner.

HAROLD L. BRODE

*Pacific-Sierra Research Corp
Santa Monica, California*

Joseph Melvin Reynolds

Joseph Melvin Reynolds, Boyd Professor of Physics Emeritus at Louisiana State University, died on 11 June 1997 in Baton Rouge after an extended fight with Alzheimer's disease.

Joe was born on 16 July 1924 in Woodlawn, Tennessee. He graduated from Vanderbilt University in 1946 and then went to graduate school at Yale University, where he received his PhD

in physics in 1950 under the direction of Cecil Lane. During his graduate school years, Joe also taught for a year at Connecticut College.

He joined LSU's physics department in 1950 and installed one of the first Collins helium liquifiers in the US. Working in a department whose research program was just beginning, he obtained some of the first experimental results on transport in low-temperature metals. Those experiments established the reputation of his laboratory, and he became one of the first scientists to receive a grant from the new National Science Foundation.

His experimental achievements included the first observation of Landau quantum oscillations (LQO) in the Hall effect (with Claude Grenier), the first direct measurement of the added mass due to the flow of the superfluid component of helium-4 (with Bill Good and Robert Hussey) and the detection of LQO in the Knight shift (with Roy Goodrich). And until his (by then) ancient helium liquifier died, he was in a close competition with Bascom Deaver and his Yale classmate William Fairbank to be the first to measure the superconducting flux quantum.

As a result of spending a sabbatical year at Stanford University, Joe helped establish the gravitational radiation detection program at LSU in 1970. He maintained an interest in gravitation experiments as long as his illness would allow him.

He served as head of the department of physics and astronomy from 1962 to 1965.

In 1966, President Lyndon Johnson appointed him to the National Science Board, on which he served for two terms. He also sat on the Naval Studies Board and on the National Academy of Sciences' Space Science Board. He participated in the Space Science Board's 1984 study *Major Directions of Space Science* and headed the task force that produced the report *Scientific Uses of the Space Station* for NASA in 1984. He also helped to initiate the space station's microgravity program and strongly supported the Schiff-Everitt experiment, which later developed into Gravity Probe B.

The LSU community especially appreciated Joe's leadership when, shortly after becoming vice president of the LSU system in 1968, he became the principal LSU coordinator for the desegregation program between Southern University and LSU. The 1950s were a difficult time in the deep South, and Joe had been one of the few who, when offered other positions, opted to stay and fight for academic integrity. That action gave him a great deal of political credibility and allowed him to

work for cooperative programs that have benefited both institutions.

In addition to his lifelong commitment to physics and the academic community, Joe was an avid sailor. Most of the old-timers in low-temperature physics recall weekends spent with Joe and his family on their boat, *Lambda Point*, sailing on Lake Ponchartrain or occasionally out into the Gulf of Mexico. Joe also loved the guitar and had a good voice for a wide repertoire of folk music.

ROY G. GOODRICH

WILLIAM O. HAMILTON

*Louisiana State University
Baton Rouge, Louisiana*

Karl Gunther Kessler

Karl Gunther Kessler, a leader in physics and metrology at what is now the National Institute of Standards and Technology (NIST), died of a heart attack in Bethesda, Maryland, on 7 July 1997. He was 77.

Kessler was born in Germany and emigrated to the US with his family in 1926. He did undergraduate as well as graduate work at the University of Michigan, where he earned his PhD in physics in 1947. He then joined the staff at the National Bureau of Standards (NBS), which later became NIST. His early research in optical spectroscopy involved energy-level analyses of complex atomic spectra, and he pioneered the use of electronic computers to unravel some of these structures. Subsequently, he turned to optical metrology, which remained his main research interest for the rest of his career.

Working with William F. Meggers from 1948 to 1950, Kessler made high-precision measurements of wavelengths of mercury-198, and demonstrated the superiority of this source over the existing wavelength standard, a discharge in cadmium-114.

In the late 1950s, Kessler developed an atomic beam as a light source of unprecedented wavelength precision, and took advantage of its low Doppler broadening to produce extremely sharp spectral lines. Unfortunately, the technique proved to be too advanced for easy transfer to other standards laboratories at the time.

With Gary Schweitzer, Kessler also invented a Zeeman filter that provided a simple method for narrowing the 253.7 nm line from a conventional mercury lamp to a width comparable to that from a beam source.

In 1959, he became chief of the spectroscopy section at NBS, where he fostered research in the increasingly important ultraviolet region and in the accurate determination of atomic transition probabilities, which are vital for

advanced work in plasma physics and astrophysics. For his development of the atomic beam source and for his outstanding leadership of NBS research groups, Kessler received a gold medal for exceptional service from the Department of Commerce in 1962.

Kessler was instrumental in modernizing research in optical metrology at NBS. After heading the atomic physics division, he was appointed director of a newly created center for precision measurement of physical quantities.

In 1986, Kessler became the NBS associate director for international and academic programs. In that position, he helped establish cooperative programs with laboratories in many other countries. He retired in 1990.

Kessler also served the wider physics community. In 1969, he was president of the Optical Society of America, which awarded him its distinguished service award in 1984. He was a Fellow of the American Physical Society and chaired the local arrangements committee of the APS Washington meeting for many years.

Kessler was a quiet man, always good-humored and unflappable. His colleagues placed a high value on his suggestions and advice. He will be missed by all of them.

**RALPH P. HUDSON
WILLIAM C. MARTIN**

*National Institute of Standards
and Technology
Gaithersburg, Maryland*

Gurgen Ashotovich Askar'yan

Gurgen Ashotovich Askar'yan, who devised the idea of self-focusing electromagnetic radiation, died of a heart attack in Moscow on 2 March 1997. He was 68.

Born in Moscow of Armenian parents, Askar'yan was educated in the physics department of Moscow State University, where he earned his candidate's degree (equivalent to a PhD) in 1952.

After graduating, he began his 40-year research career at the P. N. Lebedev Physics Institute. When the institute was divided into two parts in 1983, he joined the part that became known as the General Physics Institute.

Despite never having traveled abroad, Askar'yan was known worldwide for his contributions to many branches of physics, both theoretical and experimental. Among his most noteworthy achievements is his prediction, made in 1962, of the self-focusing of strong wave beams. Now considered a basic nonlinear effect, self-focusing

is one of the most important discoveries this century in the physics of nonlinear waves. For his work on self-focusing, Askar'yan was awarded the Lenin Prize for science and technology, the former Soviet Union's highest honor for scientists.

Askar'yan worked on how laser radiation interacts with matter. His results in that field illuminated a wide variety of complicated related phenomena. And his recent work on ultrashort, relativistically strong laser pulses is important to the physics of charged-particle laser accelerators and inertial confinement fusion.

His investigations into the electromagnetic and acoustic effects that accompany intense cosmic showers led to the development of a global system of detecting cosmic rays and neutrinos.

Askar'yan also investigated the biological effects of laser radiation on human tissue and the ecological effects of strong electromagnetic radiation. His recent investigations of the ozone hole will likely inspire further research in the same direction for many years.

He was also a connoisseur of fine art and theater. He built up rich collections of classical and modern painting and a library of several thousand books. An outstanding and lively speaker, Askar'yan always held his audience's attention. And for many years, his deep mind, intelligence and wit made him a key person in Russian scientific life.

SERGEI V. BULANOV
*General Physics Institute
Moscow, Russia*
BRUNO COPPI

*Massachusetts Institute of Technology
Cambridge, Massachusetts*

NIKOLAJ D. KARLOV
*Moscow Institute for Physics
and Technology
Moscow, Russia*

FRANCESCO PEGORARO
*University of Pisa
Pisa, Italy* ■

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CHARLES DAY

Readers take note: THIS CONFERENCE IS FOR YOU



**Who: The Society of
Vacuum Coaters**

**What: 41st SVC Annual
Technical Conference**

SVC is a professional society devoted to the exchange of technical information related to the manufacture and production of thin film products prepared by PVD processes.

Technical Sessions April 20-23

- Vacuum Web Coating
- Decorative and Functional Coating
- Optical Coating
- Plasma Processing
- Process Control & Instrumentation
- Large Area Coating
- Emerging Technologies
- New Products from Vendors
- "Meet the Experts Corner"

Major Equipment Exhibit April 21-22

SVC Education Program April 18-23

- Vacuum Technology (4 courses)
- Optical Coatings (4 courses)
- Anti-Reflective Coating Technology
- Evaporation and Sputtering
- Sputter Deposition (2 courses)
- Cryopumping Technology **NEW!**
- Basics of Vacuum Web Coating
- Mechanical Pumping Systems
- Diffusion Pump Basics
- Turbomolecular Pumps
- Cathodic Arc Deposition for Hard Coatings **NEW!**
- Principles of Color Measurement
- Film Formation, Adhesion and some Basic Film Properties
- Cleaning and Contamination Control for PVD Systems
- Deposition and Properties of ITO Coatings **NEW!**
- Optical Coating Problem-Solving using Analytical Techniques **NEW!**
- Non Conventional Plasma Sources
- PECVD **NEW!**
- Helium Leak Detector Workshop **NEW!**

When: April 18-23, 1998

**Where: Westin Hotel Copley Place
Boston, MA**

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E-mail svcinfo@svc.org
Web Site <http://www.svc.org>