

To notify the community about a colleague's death, subscribers can visit <http://www.physicstoday.org/obits>, where they can submit obituaries (up to 750 words), comments, and reminiscences. Each month recently posted material will be summarized here, in print. Select online obituaries will later appear in print.

Philip Moss Platzman

Philip Moss Platzman, a widely acclaimed contributor to condensed-matter physics, died at his home in Short Hills, New Jersey, on 7 February 2012. Though he was challenged during the last decade of his life by quadriplegia resulting from a home accident, he continued his active physics research through his last day.

Phil was born in Brooklyn, New York, on 1 May 1935. He studied physics at MIT and received his BS in 1956. He pursued his graduate work at Caltech as a Hughes fellow under the guidance of Richard Feynman and received his PhD in 1960. He subsequently joined Bell Labs and remained there until his retirement in 2001.

For much of his Bell Labs career, Phil was head of the scattering and low-energy physics research department. In addition to carrying on his own research program and supporting the research of members of his department, Phil was highly successful at recruiting and mentoring early-career physicists. Most went on to distinguished research careers, and many assumed leadership positions in academia and government labs. Though Phil's confrontational style was widely known, he was the consummate collaborator, with both Bell colleagues and scientists from many other institutions. For example, he collaborated to create several of the earliest state-of-the-art synchrotron beamlines. His extracurricular activities included frequent participation in

Aspen and Brookhaven summer programs; a year's sabbatical at the University of California, Berkeley; a long-standing adjunct appointment at UC, San Diego; and many shorter-term academic affiliations.

Even though Phil's dissertation research concerned a problem in high-energy physics, the Bell Labs environment quickly attracted him to condensed-matter physics. A major theme throughout his career was plasma effects in solids. With collaborators, he was the first to use Fermi liquid theory to predict the existence of several new collective modes, including spin and orbital waves in the three-dimensional electron gas. He predicted the existence of the magneto-roton excitation in the fractional quantum Hall effect. He also clarified the interplay between the Wigner solid and quantum Hall liquids in 2D electron gases.

Another major theme, derived from his PhD experience in high-energy physics, was x-ray interactions with solids. Phil promoted and analyzed foundational work on inelastic x-ray scattering, Compton scattering, and collective modes. A group he led was the first to suggest using x rays to probe magnetic phenomena. He shared the Advanced Photon Source's 1997 Arthur H. Compton Award with Peter Eisenberger for their contributions to x-ray scattering.

In another career highlight, Phil used the Feynman path integral approach to analyze polaron mobility, bound polarons, and electrons bound to liquid helium surfaces. That led much later to his proposal and analysis of electrons on helium as qubits for quantum computing. He also made many contributions to positron and positronium interactions with solids and surfaces. What best characterized Phil's career was the breadth of his knowledge and impact.

Following his accident, Phil redoubled his efforts to maintain an active research career. His key research tool remained his telephone, supplemented by voice-recognition software and occasional stenographic assistance. He moved into new research areas, such as deep-inelastic neutron scattering from water protons. Indeed, in his last decade Phil added about 20 papers to his pre-accident oeuvre of roughly 200. His atti-



Philip Moss Platzman

tude was incredibly positive. On frequent occasions, he remarked that the accident kept him focused on doing new physics; otherwise, he might have spent those years "just running all over talking about my old stuff." His ability to rise above his adversity was an incredible inspiration to those who knew him.

A close second to Phil's love for physics was his love for his venue—Bell Labs. Soon after his accident, he embarked on another project to supplement his physics research: writing a book about his time at the Labs during its golden years. In a series of interviews with former colleagues, he recorded their reminiscences and anecdotes. Unfortunately, "Bell Labs and the Birth of the Technology Revolution" never progressed beyond those ongoing recordings and a brief written outline. His view of Bell Labs is only now beginning to be appreciated by the broader public, and we take the liberty of quoting from his outline:

The model that Bell Labs used in the 60's & 70's—hiring new PhDs in essentially a tenured job—had never been done before and may never happen again. It laid the foundation for major university departments and the whole field of condensed matter physics. Bell Labs hired the best young people—not only in condensed matter physics, but also in other areas like high-energy physics. . . . They were offered . . . space, money, and an environment boiling with other young people. . . . The university route involved a progression from post doc to assistant to associate to full professor; at Bell Labs, everyone was a professor!

Recently posted notices at <http://www.physicstoday.org/obits>:

George Cowan

15 February 1920 – 20 April 2012

Robert G. Fuller

7 June 1935 – 9 April 2012

Roger C. Molander

20 November 1940 – 25 March 2012

Paul Callaghan

19 August 1947 – 24 March 2012

Marina Salye

19 October 1934 – 21 March 2012

Saul Altshuler

11 June 1919 – 10 October 2011

Athletic activity formed a major counterpoint to Phil's science. His varsity basketball at MIT continued into pick-up games at Bell Labs, gradually to be replaced by tennis, which he played the rest of his active life. He loved the outdoors, from winter ski trips to mountain hikes to weeklong backpacking trips in western wilderness areas. An avid sports fan, Phil followed his favorite teams in baseball, basketball, and football. Two days before his death, as he sat enthralled by the final tense moments of the 2012 Super Bowl, he made an unprecedented statement: "This has been such a good game that I don't even care if the Giants lose!" Metaphorically, that summarized his life in physics—he loved the game. And he scored his own share of winning touchdowns.

D. R. Hamann
Rutgers University
Piscataway, New Jersey

Eric D. Isaacs
Argonne National Laboratory
Argonne, Illinois

David Sayre

David Sayre, a ground-breaking crystallographer, leader in coherent diffraction imaging, member of the team that wrote the original For-



David Sayre

tran compiler, and visionary leader in x-ray microscopy, died of complications from Parkinson's disease on 23 February 2012 in Bridgewater, New Jersey.

Born on 2 March 1924 in New York City, David received his BS in physics from Yale University at the age of 19. During 1943–46 he worked on radar at the MIT Radiation Laboratory before going to graduate school. He received his PhD from Oxford University in 1951 in x-ray crystallography, working with

Dorothy Hodgkin. During that time David and his wife, Anne, got to know Rosalind Franklin, another young crystallographer who was working at King's College London.

David wrote some of his seminal papers during 1951–52. He had discovered what is known today as Sayre's equation, which was the critical step needed in the development of direct methods in crystallography. His half-page 1952 paper in *Acta Crystallographica*, "Some implications of a theorem due to Shannon," forms the foundation of diffraction microscopy, also known as coherent diffraction imaging and lensless imaging. Sixty years later it is still frequently cited in the literature.

Between 1956 and 1990, David worked for IBM. He was part of the team that developed Fortran as the first high-level language for technical computing. He was the first assistant manager of the Fortran development group and later corporate director of programming. In 1969, while he was leader of programming research, he and his team showed that the virtual memory overlay system worked consistently better than the best manually controlled ones; that put to rest the debate over which memory system worked best for commercial computers. In 1971

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