

1951, as a result of his deep attachment to freedom: He preferred to resign rather than sign a loyalty oath. He moved to Brookhaven National Laboratory in 1957 to lead its theory division. At that time we developed the helicity formalism for the description of collisions of relativistic particles of arbitrary spin. It soon became a basic tool for the analysis of the many particles discovered in the 1960s. As my thesis adviser at Brookhaven Wick had a positive and lasting effect on my life.

In 1965 Wick became a tenured professor at Columbia, with which he had been associated since 1958. In collaboration with Lee, Wick introduced in 1971 the idea that in quantum field theory the vacuum could show a special structure disappearing at high temperature and that a new form of matter could result. This form of matter was the precursor of the quark-gluon plasma now being sought in high-energy heavy ion collisions.

Following his retirement from Columbia in 1977, Wick joined the Scuola Normale Superiore in Pisa, Italy. He retired from there in 1984.

Lee once said: "Gian-Carlo Wick was a person of gentle disposition and deep thoughts. Throughout his career, he immersed himself in the fundamental problems of physics, invariably motivated by their challenge and importance. His solutions were always characterized by a special clarity of mathematical analysis." Wick indeed had an uncompromising attitude and an extreme intellectual honesty.

Fluent in four languages, Wick was a humanist, and he showed a wide span of intellectual interests. He was deeply concerned about the responsibility of physicists in society, and this concern deepened through the long cold-war years. He once allegorically compared the physics community to adults who leave their children alone in a log cabin, giving them a box of matches to play with but later deeply regretting having done such a thing! While he did not think physicists could be better than others at solving the problems of the world, he repeatedly stressed their strong responsibility to inform and advise.

MAURICE JACOB
CERN
Geneva, Switzerland

Giulio Ascoli

Giulio Ascoli died on 4 February 1992 in Urbana, Illinois, after a long struggle with emphysema.

Giulio was born on 26 October 1922

in Milan, Italy. He began his college education at the University of Lausanne in Switzerland. His schooling was interrupted in 1941 when he followed his parents to the US. He completed his undergraduate training at MIT and received a BS in chemical engineering in 1942. In 1943 Ascoli joined the US Army and obtained his US citizenship. After the war he worked as a chemical engineer at Oak Ridge National Laboratory. From there he returned to MIT, where he earned a PhD in physics in 1951 with Bruno Rossi. His thesis research was a measurement of the muon mass using a cloud chamber at the cosmic-ray laboratory at Mount Evans in Colorado. It yielded a value of $207.4 \pm 2.4 m_e$ compared with the current best value of $207.77 m_e$.

Ascoli then joined the physics department of the University of Illinois, where he worked first on kaon-proton scattering using emulsion stacks, then on bubble-chamber hadron spectroscopy. His best-known contribution is the "Ascoli analysis" of angular-distribution and effective-mass data from particle spectrometers. In this analysis one describes the final state as a coherent superposition of complex eigenstates. Ascoli showed how to determine the amplitudes and phases as a function of the final-state mass. This rigorous analysis served to determine the parameters of resonant states and to eliminate many spurious ones. During the last few years of Ascoli's career he worked on experiments at Fermilab, first studying hadron-produced states of charmonium and finally contributing to the design of equipment for the Collider Detector at Fermilab.

Giulio's work was characterized by profound physical insight combined with virtuosic mastery of mathematical and experimental techniques. A natural elegance resulted from its directness and practicality.

LEE HOLLOWAY
ROBERT SARD

University of Illinois, Urbana-
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Everett W. Thatcher

Everett W. Thatcher, physics teacher and researcher, died on 24 April 1992 from complications of Alzheimer's disease. He was 88 years old. Ev lived in San Diego and was active in amateur radio for 20 years after retiring from the Navy Electronics Laboratory in 1966.

Born in Jefferson, Ohio, Ev first attended Santa Ana Junior College in California, then returned to Ohio to complete his AB (1926) and AM (1927)

in physics at Oberlin College. He then entered the University of Michigan, where he earned his PhD in physics in 1931. Ev experimented with vacuum tubes and circuits, particularly thermal agitation of electrons in conductors and statistical fluctuations of electron currents under space charge.

Teaching was Ev's main interest. He taught at Purdue University in 1927, then at the University of Nebraska in 1928-29. After earning his PhD he spent the next 15 years as a professor of physics at Union College in Schenectady, New York. In addition, in 1939 he began teaching physics and meteorology in civil pilot training for the Civil Aeronautics Administration. He changed to war training service in electronics engineering in 1940. In 1944 Ev was drawn into the Office of Scientific Research and Development to be a scientific liaison between Washington and London in the development of radar jamming by metal chaff—the so-called "radar window."

In 1946 Ev was again called away from Union College to be a scientific liaison, this time by Ralph Sawyer, who had been his graduate study adviser at the University of Michigan. Sawyer was technical director of Operation CROSSROADS, a test of the effects of an atomic bomb on some 77 ships at Bikini Atoll. As deputy technical director, Ev coordinated and guided the various studies of effects of the atomic explosion on propagation of electromagnetic waves. On completion of the Bikini test reports in autumn 1946, he joined the US Navy Electronics Laboratory in San Diego. The laboratory had just been established through the consolidation of wartime labs. His task was to establish a research effort there. Over the ensuing years, he built and guided the laboratory's research department, which became known for studies in oceanography, underwater sound, atmospheric and electromagnetic wave propagation and scattering. Ev is especially remembered for his belief that maintaining basic research in the laboratory as essential for its continued vitality. This motivation became unpopular in later years when corporate-style management came into vogue in the Defense Department. Ev would on occasion escape the front office and appear in our Arctic submarine experimental pool as a lone experimenter, measuring the scattering of microwaves by sea ice.

WALDO LYON
Arctic Submarine Laboratory
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